



Moor Vannin Offshore Wind Farm

Scoping Report

Volume 1: Introductory Chapters

Revision Summary					
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Glossary

Term	Definition
Agreement for Lease (AfL)	An agreement for lease (AfL) is an agreement between a landlord and prospective tenant to grant and/or to accept a lease in the future. The AfL gives the option to investigate a site for potential development. There is no obligation on the developer to execute a lease if they do not wish to.
Allision	Contact between a moving object and a stationary object.
Applicant	Moor Vannin Offshore Wind Farm Limited (Company Registration Number: 013051V)
Archaeology	Study of human activity through the recovery and analysis of material culture.
Automatic Identification System (AIS)	A system by which vessels automatically broadcast their identity, key statistics including location, destination, length, speed, and current status, e.g., under power. Most commercial vessels and United Kingdom (UK)/European Union (EU) fishing vessels over 15 metre (m) length are required to carry AIS.
Baseline	The status of the environment at the time of assessment without the development in place.
Bathing Water	Bathing Waters can be coastal or inland waters, designated under the Bathing Waters Regulations. Bathing must either be explicitly authorised, or not prohibited and practiced traditionally by a large number of people.
Bathing Water season	The 'season' wherein the water quality is tested at designated sites (Bathing Waters) on an annual basis, running from 01 May to 18 September.
Beam trawl	A method of bottom trawling with a net that is held open by a beam, which is generally a heavy steel tube supported by steel trawl heads at each end. Tickler chains or chain mats, attached between the beam and the ground rope of the net, are used to disturb fish and crustaceans that rise up and fall back into the attached net.
Bioseasons (ornithology)	Periods of time during which birds carry out part of their annual cycle (e.g. breeding, or migration)
Breeding season (ornithology)	Period during which bird movements are constrained by the need to attend a nest or young
Carbon Capture Usage and Storage (CCUS)	CCUS is the process of capturing waste carbon dioxide (CO ₂), transporting it to a storage site and depositing it where it will not enter the atmosphere.
Cetacean	aquatic mammal constituting the infraorder Cetacea (whales, dolphins, porpoises)
Collision	Contact between moving objects.
Commitments	Commitments, or mitigation measures, are made by the Project to reduce and/ or eliminate the potential for likely significant effects (LSE) to arise as a result of the Proposed Development. Primary (Design) or Tertiary (Inherent) Commitments are both embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, Preliminary Environmental Information Report (PEIR) or ES). Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment so that residual effects are acceptable.
Controlled Airspace	Defined airspace within which pilots must follow Air Traffic Control instructions implicitly. In the UK, Classes A, C, D and E are areas of controlled airspace.
Cultural heritage	Features belonging to the culture of a particular society, such as traditions, languages, or buildings, that were created in the past and still have historical importance.

Term	Definition
Cumulative effects	The combined effect of the Proposed Development acting cumulatively with the effects of a number of different projects, on the same single receptor/ resource.
Cumulative impact	Impacts that result from changes caused by other past, present or reasonably foreseeable actions together with the Proposed Development.
Decommissioning	The period during which a development and its associated processes are removed from active operation.
Demersal	Living on or near the seabed.
Demersal trawl	A fishing net used by towing the trawl along or close to the seabed.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ).
Disaster	May be a natural hazard (e.g., earthquake) or a man-made/ external hazard (e.g., act of terrorism) with the potential to cause an event or situation that meets the definition of a major accident.
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
EIA Directive	European Union Directive 85/337/EEC, as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC and then codified by Directive 2011/92/EU of 13 December 2011 (as amended in 2014 by Directive 2014/52/EU).
Environmental Impact Assessment (EIA)	A statutory process by which the environmental impacts of certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the assessment processes undertaken and the subsequent results of the EIA.
Fish stock	Any natural population of fish which an isolated and self-perpetuating group of the same species.
Fishery	A group of vessel voyages which target the same species or use the same gear.
Fishing ground	An area of water or seabed targeted by fishing activity.
Fleet	A physical group of vessels sharing similar characteristics (e.g., nationality).
Formal Safety Assessment (FSA)	A structured and systematic process for assessing the risks and costs (if applicable) associated with shipping activity as defined by the International Maritime Organisation (IMO).
Full-time equivalent jobs	Full time equivalent (FTE) is a unit that indicates the workload of an employed person.
Gear type	The method / equipment used for fishing.
Gross value added	The measure of the value of goods and services produced in an area, industry or sector of an economy. At the level of a firm, it is broadly equivalent to employment costs plus a measure of profit.
Habitats Regulations Assessment (HRA)	Habitats Regulations Assessment. An EU derived process that is used in the UK which helps determine likely significant effects and (where appropriate) identifies adverse effects on the integrity of European conservation sites and (by virtue of planning policy, also applied to Ramsar sites). The process consists of up to four stages of assessment:

Term	Definition
	screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of over-riding public interest (IROPI) and compensatory measures.
Haul-out	a behaviour associated with pinnipeds temporarily leaving the water for reasons such as reproduction and rest
Historic Environment Record	The record contains details on local archaeological sites, finds, and historic buildings.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Indirect employment and gross value added	Employment and gross value added which is associated with the suppliers of companies that supply goods and services as part of the supply chain of the Isle of Man OWF Project.
International Council for the Exploration of the Seas (ICES) statistical rectangles	ICES standardise the division of sea areas to enable statistical analysis of data. Each ICES statistical rectangle is '30 min latitude by 1 degree longitude' in size (approximately 30 x 30 nautical miles). A number of rectangles are amalgamated to create ICES statistical areas.
Inter-related Effects	Multiple effects on the same receptor group arising from the Proposed Development, where a number of separate effects occur on a single receptor, leading to an potentially greater effect than each effect considered in isolation.
Intertidal	Area where the ocean meets the land between high and low tides.
Joint Bay (JB)	A joint bay provides a secure environment for the assembly of cable joints as well as bonding and earthing leads. A joint bay is installed between each length of cable.
Landfall	The location at the land-sea interface where the offshore export cable will come ashore.
Landings	Quantitative description of amount of fish returned to port for sale, in terms of value or weight.
Landscape	An area of land, as perceived by people, whose character is the result of the action and interaction of natural and/ or human factors.
LiDAR	Used in archaeology to map possible archaeological features that are difficult/indistinguishable at ground level.
Likely Significant Effects (LSE)	It is a requirement of Environmental Impact Assessment Regulations to determine the likely significant effects of the Proposed Development on the environment which should relate to the level of an effect and the type of effect.
Magnitude (of change)	A term that combines judgements about the size and scale of the impact, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short term or long term in duration'. Also known as the 'degree' or 'nature' of change.
Maintain	Includes inspect, upkeep, repair, adjust, and alter and further includes remove, reconstruct and replace, and "maintenance" must be construed accordingly.
Major accident	Events that threaten immediate or delayed serious environmental effects to human health, welfare and/ or the environment and require the use of resources beyond those of the client or its appointed representatives to manage. Whilst malicious intent is not accidental, the outcome (e.g., train derailment) may be the same and therefore many mitigation measures will apply to both deliberate and accidental events.
Management Unit	Management Unit (MU) typically refers to a geographical area in which the animals of a particular species are found, to which management of human activities is applied. An

Term	Definition
	MU may be smaller than what is believed to be a 'population', to reflect spatial differences in human activities and their management.
Marine Guidance Note (MGN)	A system of guidance notes issued by the United Kingdom (UK) Maritime and Coastguard Agency (MCA) which provide significant advice relating to the improvement of the safety of shipping at sea, and to prevent or minimise pollution from shipping.
Marine Infrastructure Consent	A consent granted by the Council of Ministers under the Marine Infrastructure Management Act 2016 (MIMA).
Maximum Design Scenario	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.
Mean maximum foraging range	A distance from the colony within which birds will forage
Mitigation	Mitigation measures, or commitments, are commitments to reduce and/ or eliminate the potential for significant effects to arise as a result of the Proposed Development. Mitigation measures can be embedded (i.e., part of the project design) or secondarily added to reduce impacts where potentially significant adverse effects are identified.
Moor Vannin Offshore Wind Farm	Refers to "The Whole Project". All aspects of the Proposed Development, an operations and maintenance base in the Isle of Man, and any associated Route to Market (RtM) and Power toX (P2X) assets that are located outside the Isle of Man's jurisdiction.
Navigational Risk Assessment (NRA)	Document required by the Maritime and Coastguard Agency (MCA) under Marine Guidance Note (MGN) 654 which assesses risk associated with on Offshore Renewable Energy Installation (OREI) to shipping and navigation users.
Non-statutory consultee	Organisations that the Applicant may be required to or may otherwise choose to engage during the pre-application phases (if, for example, there are planning policy reasons to do so) who are not designated in law but are likely to have an interest in a proposed development.
Offshore Array	The generation (turbines and Array Cables) and transmission (Interlink Cables and Offshore Substations) asset infrastructure contained within the Agreement for Lease (AfL) area.
Offshore Electrical Connection Cable	The Electrical Cable(s) connecting the Offshore Array to landfall in the Isle of Man, including the SCADA cables from the turbines, to be located within the Offshore Electrical Connection Search Area.
Offshore Electrical Connection Search Area	The search area for the Offshore Electrical Connection Cable(s) within which they will be located. This area will comprise the marine components of the Proposed Development which are contained wholly within the Isle of Man Territorial Sea.
Offshore Substation (OSS)	Platforms located within the Offshore Array which house electrical equipment and control and instrumentation systems. They also provide access facilities for work boats and helicopters.
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection, including the terrestrial electrical cable and onshore substation.
Otter trawl	A net with large rectangular boards (otter boards) which are used to keep the mouth of the trawl net open. Otter boards are made of timber or steel and are positioned in

Term	Definition
	such a way that the hydrodynamic forces, acting on them when the net is towed along the seabed, pushes them outwards and prevents the mouth of the net from closing.
Pathway	The route by which the source can reach the receptor.
Pelagic	Of or relating to the open sea.
Pelagic trawl	A net used to target fish species in the mid water column.
Pinniped	aquatic mammal constituting the clade Pinnipedia (true seals, eared seals and walrus)
Power to X (P2X)	Power-to-X (also known as P2X) is a collective term for conversion technologies that use renewable electricity, for example wind power, to create something else ('X'). The 'X' created is an energy carrier – usually a carbon-neutral synthetic fuel, such as hydrogen, synthetic natural gas, liquid fuels, or chemical, though usually renewable hydrogen – which can power medium- to heavy-duty transport or be used in industry.
Primary Surveillance Radar (PSR)	A radar system that measures bearing and distance of targets using the detected reflections of radio signals.
Protocol	A bespoke Protocol for Archaeological Discoveries, based on The Crown Estate's Protocol for Archaeological Discoveries: Offshore Renewables Projects (2014) to support the reporting of unexpected archaeological material during the lifetime of the Project.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
Recruitment	Recruitment can be defined as the number of fish surviving to enter the fishery or to some life history stage such as settlement or maturity.
Regular Operator	A commercial operator associated with one or more vessels that transit an area on a regular basis.
Risk	The likelihood of an impact occurring, combined with the effect or consequence(s) of the impact on a receptor if it does occur.
Risk Event	An identified, unplanned event, which is considered relevant to the development and has the potential to result in a major accident and/ or disaster, subject to assessment of its potential to result in a significant adverse effect on an environmental receptor.
Route to Market (RtM) Transmission Asset Funnel	The area outside the Offshore Array within which the Route to Market Transmission Assets may exit the AfL area (e.g. Electrical Cables to National Grid in the UK) and terminate in other jurisdictions (e.g. Wales, England or Eire)
Route to Market (RtM) Transmission Assets	The transmission assets associated with the Route to Market options situated within the Offshore Array and the Route to Market Transmission Asset Funnel.
Scallop dredge	A method to catch scallop using steel dredges with a leading bar fitted with a set of spring loaded, downward pointing teeth. Behind this toothed bar (sword), a mat of steel rings is fitted. A heavy net cover (back) is laced to the frame, sides and after end of the mat to form a bag.
Seascape	An area of sea, coastline and land, as perceived by people, whose character results from the actions and interactions of land with sea, by natural and/ or human factors.
Secondary Surveillance Radar (SSR)	A radar system that transmits interrogation pulses and receives transmitted responses from suitably equipped aircraft.

Term	Definition
Sensitivity	The sensitivity of a receptor is a function of its value, and capacity to accommodate change reflecting its ability to recover if it is affected.
Sensitivity	The sensitivity of a receptor is a function of its value, and capacity to accommodate change reflecting its ability to recover if it is affected.
Significant environmental effect (in relation to a major accident and/ or disasters assessment)	Could include the loss of life, permanent injury and temporary or permanent destruction of an environmental receptor which cannot be restored through minor clean-up and restoration, (IEMA and ARUP, 2020)
Source	The original cause of the hazard, which has the potential to cause harm.
Source-pathway-receptor linkage	For a risk to arise there must be hazard that consists of a 'source' (e.g., high rainfall); a 'receptor' (e.g. people, property, environment); and a pathway between the source and the receptor (e.g. flood routes).
Spawning	The act of releasing or depositing eggs (fish).
Statutory consultee	Organisations that are required to be consulted by the Applicant. Not all prescribed bodies and interests will be statutory consultees (see non-statutory consultee definition).
Stock assessment	An assessment of the biological stock of a species and its status in relation to defined references points for biomass and fishing mortality.
Stratification	Vertical density gradients over relatively short distances within the water column caused by varying temperature and/or salinity structure.
Study Area	Area(s) within which environmental impact may occur – to be defined on a receptor-by-receptor basis by the relevant technical specialist.
Supervisory control and data acquisition (SCADA)	SCADA is a fundamental tool to monitor and control several parameters of wind turbines. It is a computer-based system that allows local and remote control of basic wind turbine functions and collects data from the wind farm that can be used to analyse and report on operational performance.
Terrestrial Electrical Connection Cable	The Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid via an onshore substation.
Terrestrial Electrical Connection Search Area	The search area for the Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid via an onshore substation.
The Applicant	Moor Vannin Offshore Wind Farm Limited
The Proposed Development	The parts of the Moor Vannin Offshore Wind Farm that will be defined within the Scoping Report and for which a Scoping Opinion is being sought from the Isle of Man Government and its departments. These are: the Offshore Array, the Offshore Electrical Connection Cable, the RtM Transmission Assets within the Offshore Array, the Terrestrial Electrical Connection Cable and the onshore substation.
Total Allowable Catch (TAC)	TACs are catch limits, expressed in tonnes or numbers, that are set for some commercial fish stocks.
Transboundary Effects	Transboundary effects arise when impacts from the Proposed Development within one jurisdiction effects the environment of another jurisdiction.
Transition Joint Bay (TJBs)	The offshore and onshore cable circuits are jointed on the landward side of the sea defences/ beach in a Transition Joint Bay (TJB). The TJB is an underground chamber

Term	Definition
	constructed of reinforced concrete which provides a secure and stable environment for the cable.
Unique vessel	An individual vessel identified on any particular calendar day, irrespective of how many tracks were recorded for that vessel on that day. This prevents vessels being over counted. Individual vessels are identified using their Maritime Mobile Service Identity (MMSI).
Vessel Monitoring System (VMS)	A system used in commercial fishing to allow environmental and fisheries regulatory organizations to monitor, minimally, the position, time at a position, and course and speed of fishing vessels.
Vulnerability	Describes the potential for harm as a result of an event, for example due to sensitivity or value of receptors. In the context of the EIA Directive, the term refers to the 'exposure and resilience' of the development to the risk of a major accident and/ or disaster. Vulnerability is influenced by sensitivity, adaptive capacity and magnitude of impact (IEMA and ARUP, 2020)
Water Framework Directive Classifications	The classification scheme used in the UK that allows for standardised assessment of waterbodies under the Water Framework Directive. The classifications identify the current status of a waterbody, and provide a way of tracking changes in waterbody status over time.
Wind turbine generator (WTG)	All the components of a wind turbine, including the tower, nacelle, and rotor.
Zone of Influence	The area surrounding the Proposed Development which could result in likely significant effects.

Abbreviations and Acronyms

Term	Definition
AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekday Traffic
AD	Air Defence
ADD	Acoustic Deterrent Device
AEZ	Archaeological Exclusion Zones
AfL	Agreement for Lease
AHLV	Area of High Landscape Value and Scenic Significance
AIP	Aeronautical Information Publication
AIS	Automatic Identification System
ALARP	As Low as Reasonably Practicable
AMSL	Above Mean Sea Level
ANO	Air Navigation Order
AQTAG09	Air Quality Technical Advisory Group 09
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas
ASP	Area of Special Protection

Term	Definition
ASSI	Area of Special Scientific Interest
ATC	Air Traffic Control
ATC	Automatic Traffic Count
AtoN	Aids to Navigation
BCT	Bat Conservation Trust
BDMPS	Biogeographic Biologically Defined Minimum Population Scales
BERR	Department for Business, Enterprise and Regulatory Reform
BCS	British Geological Survey
BNL	Baseline Noise Level
BOA	Breadth Overall
BPM	Best Practicable Means
BSI	British Standards Institution
BTO	British Trust for Ornithology
CA	Conservation Area
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CBD	The Convention on Biological Diversity
CBRA	Cable Burial Risk Assessment
CCUS	Carbon Capture Utilisation and Storage
CEA	Cumulative Effects Assessment
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan
CIA	Cumulative Impact Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
CIfA	Chartered Institute for Archaeologists
CIRIA	Construction Industry Research and Information Association
CITES	Washington Convention on the International Trade in Endangered Species of Flora and Fauna
CMS	Bonn Convention on the Conservation of Migratory Species of Wild Animals
CO	Carbon Monoxide
CoCP	Code of Construction Practice
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea
CoPA	Control of Pollution Act
COs	Conservation Objectives
COWRIE	Collaborative Offshore Windfarm Research Into the Environment
CP	Civil Aviation Administration Publication
CPA	Coast Protection Act 1949
CRM	Collision Risk Modelling
CSM	Conceptual Site Model
CTMP	Construction Traffic Management Plan
CTR	Control Area

Term	Definition
CTV	Crew Transfer Vessel
DAA	Developable Area Approach
DAS	Digital Aerial Survey
DCF	Data Collection Framework
DCO	Development Consent Order
DDV	Drop Down Video
DECC	Department of Energy and Climate Change
DEFA	the Department of Environment, Food and Agriculture, Isle of Man
DEFRA	Department of Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DfT	Department of Transport
DMRB	Design Manual for Roads and Bridges
Dol	Department of Infrastructure
DSM	Digital Surface Model
DTI	Department of Trade and Industry
DTM	Digital Terrain Model
ECIA	Ecological Impact Assessment
ECR	Electrical Cable Route
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
EMSA	European Maritime Safety Agency
EPA	Environmental Protection Act
EPD	Environmental Product Declaration
EPP	Evidence Plan Process
EPS	European protected species
EQS	Environmental Quality Standards
ERCoP	Emergency Response Cooperation Plan
ES	Environmental Statement
EU	European Union
FEPA	Food and Environmental Protection Act 1985
FLO	Fisheries Liaison Officer
FSA	Formal Safety Assessment
GDL	Garden and Designed Landscape
GES	Good Environmental Status
GHG	Greenhouse gases
GIS	Geographic Information System
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, Third Edition
GPG	Good Practice Guide

Term	Definition
GSD	Ground Sample Distance
GT	Gross Tonnage
GWD	Groundwater Directive
HCA	Helideck Certification Agency
HDD	Horizontal Directional Drilling
HDV	Heavy-Duty Vehicle
HEDBA	Historic Environment Desk-Based Assessment
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Assessment
HSC	Historic Seascape Character
HSE	Health, Safety and Environment
HSWA	Health and Safety at Work Act
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IAMMWG	Inter-agency Marine Mammal Working Group
IAQM	Institute of Air Quality Management
ICAO	International Civil Aviation Organisation
ICES	International Council for the Exploration of the Sea
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEF	Important Ecological Feature
IEMA	Institute of Environmental Management and Assessment
IFP	Instrument Flight Procedure
IHBC	Institute of Historic Building Conservation
IMO	International Maritime Organization
INNS	Invasive Non-Native Species
IoA	Institute of Acoustics
IOF	Impacted Ornithological Features
IOMCAA	Isle of Man Civil Aviation Administration
IOMHER	Isle of Man Historic Environment Record
IPCC	Intergovernmental Panel on Climate Change
ITT	Invitation to Tender
JB	Joint Bay
JNCC	Joint Nature Conservation Committee
LAQM	Local Air Quality Management
LAT	Lowest Astronomical Tide
LCRM	Land Contamination Risk Management
LCT	Landscape Character Type
LEMP	Landscape and Ecological Management Plan

Term	Definition
LiDAR	Light Detection and Ranging
LOA	Length Overall
LoLo	Lift-On/Lift-Off
LPG	Liquefied Petroleum Gas
LSE	Likely Significant Effect
LSEEIA	Likely Significant Effect Environmental Impact Assessment
LTMP	long-term management plan
LVIA	Landscape and Visual Impact Assessment
MA&D	Major Accidents and Disasters
MAIB	Marine Accident Investigation Branch
MarESA	Marine Evidence based Sensitivity Assessment
MCA	Maritime and Coastguard Agency
MCZ	Marine Conservation Zone
MDS	Maximum Design Scenario
Met	Meteorological
MGN	Marine Guidance Note
MHER	Manx Historic Environment Record
MHW	Mean High Water
MIC	Marine Infrastructure Consent
MIMA	Marine Infrastructure Management Act 2016
MLW	Mean Low Water
MMEA	Manx Marine Environmental Assessment
MMF	Mean maximum foraging range
MMO	Marine Management Organisation
MNH	Manx National Heritage
MNR	Marine Nature Reserve
MOD	Ministry of Defence
MPCP	Marine Pollution Contingency Plan
MSA	Minimum Sector Altitude
MSFD	Marine Strategy Framework Directive
MSL	Mean Sea Level
MU	Management Unit
MU	Manx Utilities
MW	Megawatt
NCA	National Character Area
NERL	NATS (En-Route) plc
NHLE	National Heritage List for England
NIGFS	Northern Irish Ground Fish Trawl Survey
NLB	Northern Lighthouse Board
NMFS	National Marine Fisheries Service

Term	Definition
NMHR	National Marine Heritage Record
NNR	National Nature Reserve
NO2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NPSE	Noise Policy Statement for England
NRA	Navigational Risk Assessment
NRMM	Non-Road Mobile Machinery
NSIP	Nationally Significant Infrastructure Project
NSR	Noise Sensitive Receptor
NSTA	North Sea Transition Authority
NtM	Notice to Mariners
NTSLF	National Tide and Sea Level Facility
NVMP	Noise and Vibration Management Plan
O&M	Operations and Maintenance
OCS	Offshore Converter Station
OEIA	Onshore Ecological Impact Assessment
OnSS	Onshore Substation
OPERA	Operational Programme for the Exchange of Weather Radar Information
OREI	Offshore Renewable Energy Infrastructure
OSPAR	Oslo-Paris Convention for the Protection of the Marine Environment of the North-East Atlantic
OSS	Offshore Substation
OWF	Offshore Wind Farm
P2X	Power-to-X
PAH	Polycyclic Aromatic Hydrocarbon
PAMP	Public Access Management Plan
PCB	Polychlorinated Biphenyl
PEXA	Practice and Exercise Area
PHE	Public Health England
PHI	Public Health Institute
PINS	Planning Inspectorate
PM	Particulate Matter
PPG	Pollution Prevention Guidance
PPP	Pollution Prevention Plan
PPS	Planning Policy Statement
PRoW	Public Rights of Way
PSA	Protected Sites Assessment
PSR	Primary Surveillance Radar
PTS	permanent threshold shift

Term	Definition
PVA	Population Viability Analysis
Q1	Quarter 1
QI	Qualifying Interest
RAM	Restricted in Ability to Manoeuvre
RCP	Representative Concentration Pathway
RIAA	Report to Inform Appropriate Assessment
RLoS	Radar Line of Sight
RNLI	Royal National Lifeboat Institution
Rol	Republic of Ireland (Eire)
RoPax	Roll-On/Roll-Off Passenger
RoRo	Roll-On/Roll-Off Cargo
RPSS	Route Planning and Site Selection
RtM	Route to Market
RYA	Royal Yachting Association
SAC	Special Area of Conservation
SAR	Swept Area Ratio
SAR	Search and Rescue
SCADA	Supervisory Control and Data Acquisition
SCANS	Small Cetacean Abundance in the North Sea
SD	Standard deviation
SEI	Supporting Environmental Information
SEL	Sound Exposure Level
SLVIA	Seascape, Landscape And Visual Impact Assessment
SMP	Soil Management Plan
SNCB	Statutory Nature Conservation Body
SO2	Sulphur Dioxide
SOLAS	The International Convention for the Safety of Life at Sea
SOV	Service Operations Vessel
SPA	Special Protection Area
SPL	Sound Pressure Level
s-p-r	Source – Pathway – Receptor
SSC	Suspended Sediment Concentration
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System
TAC	Total Allowable Catch
TCE	The Crown Estate
TCPA	Town and Country Planning Act
TEZ	Temporary Exclusion Zone
TJB	Transition Joint Bay
TSC	Territorial Seas Committee

Term	Definition
TTS	temporary threshold shift
UK	United Kingdom
UKFEN	UK Fisheries Economic Network
UKHO	United Kingdom Hydrographic Office
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UXO	Unexploded Ordnance
VFR	Visual Flight Rules
VMS	Vessel Monitoring System
WCA	Wildlife and Countryside Act 1981 (as amended)
WCH	Walkers, Cyclists and Horse-Riders
WeBS	Wetland Bird Survey
WFD	Water Framework Directive
WHO	World Health Organisation
WHS	World Heritage Site
WSI	Written Scheme of Investigation
WTG	Wind Turbine Generator
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

Units

Term	Definition
%	Percent
£	Pound sterling
€	Euros
°C	Degrees Celsius
cm	Centimeters
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2 x 10 ⁻⁵ Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
ft	Feet
FTE	Full-time equivalent
GtCO ₂ -eq	Carbon Dioxide Equivalent

Term	Definition
GW	Gigawatts
Ha	Hectare
hp	Horsepower
Hz	Hertz
kg	Kilograms
KHz	Kilohertz
km	Kilometres
km ²	Kilometre squared
knots	Nautical mile per hour
kW	Kilowatts
L10 and L90	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The Ln indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L10 is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L90 is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the L10 index to describe traffic noise.
LAeq	LAeq is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A - weighted fluctuating sound measured over that period.
LAm _{ax}	LAm _{ax} is the maximum A - weighted sound pressure level recorded over the period stated. LAm _{ax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
m	Metres
m/s	Metres per second
m ²	Metres Squared
mg/l	Milligrams per litre
mm	Millimetres (distance)
mm/year	Millimetres per year
mph	Miles per hour
MW	Megawatts
nm	Nautical Mile
nm ²	Square Nautical Mile
t	Tonne
Veh/hr	Vehicles per hour

1 Introduction

1.1 Overview

- 1.1.1.1 Mooir Vannin Offshore Wind Farm Limited (Company Registration No: 013051V) (hereafter the Applicant) is proposing to develop the Mooir Vannin Offshore Wind Farm (hereafter the Whole Project). The Whole Project will include the Offshore Array and any electrical transmission assets within the array, Offshore Electrical Connection Cable and the Terrestrial Electrical Connection Cable to an onshore substation in the Isle of Man, collectively referred to as the Proposed Development for the purpose of Scoping. The location of the Proposed Development in relation to the Isle of Man is illustrated on Figure 1.1.
- 1.1.1.2 Additionally, the Whole Project includes an operations and maintenance (O&M) base located in the Isle of Man (subject to a separate consent), the offshore and onshore infrastructure associated with the Route to Market (RtM) Transmission Assets and any P2X infrastructure (see section 3.3.11 of Chapter 3, Project Description) that are located outside the Isle of Man's jurisdiction and are also subject to separate consents.
- 1.1.1.3 This Chapter introduces the Environmental Impact Assessment (EIA) Scoping Report and a background to the Proposed Development is provided below (section 1.2.2), alongside a description of the purpose (section 1.4) and structure (section 1.7) of this Scoping Report.

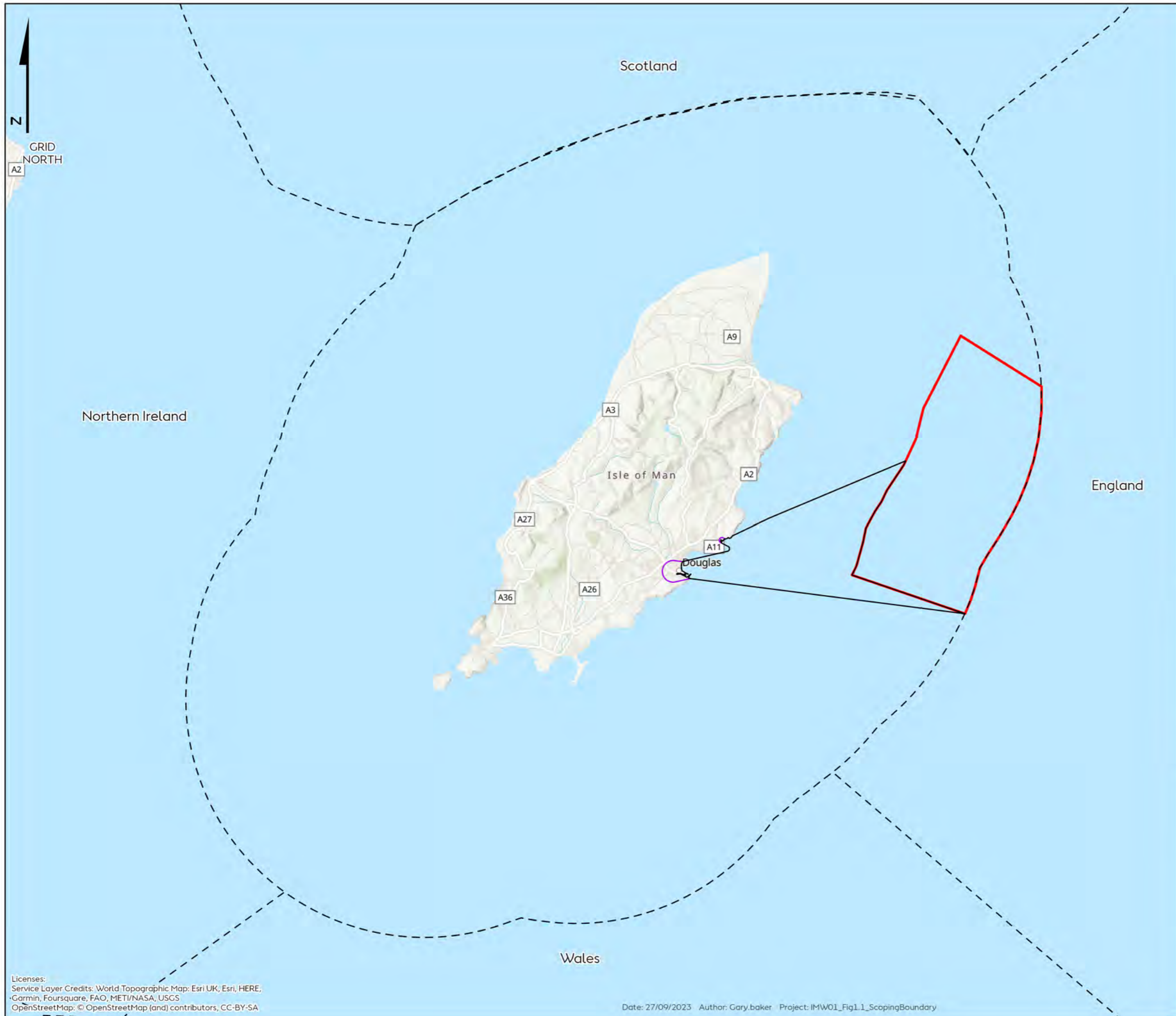
1.2 Background

1.2.1 The Applicant

- 1.2.1.1 The Applicant, Mooir Vannin Offshore Wind Farm Limited, is ultimately owned by Orsted A/S. Orsted A/S specialises in procuring, producing, distributing and trading energy and related products across the World. Orsted A/S is the world leader in the construction and operation of offshore wind farms, with more than 30 years' experience and a strong track record in delivering successful projects, with approximately 7.5 GW of operational offshore wind farms worldwide.

1.2.2 The Proposed Development

- 1.2.2.1 In May 2014, the Isle of Man Government issued an Invitation to Tender (ITT) for an offshore wind farm lease area wholly within Isle of Man Territorial Seas. The Applicant (then called DONG Energy Isle of Man (UK) Limited) took part in the competitive bidding process and was selected as 'preferred bidder' in October 2014. In November 2015, an AfL was signed between the Applicant and the Isle of Man Government. This AfL identified an area of search of approximately 253 km² to the east of the island (illustrated in Figure 1.1, labelled as the 'Offshore Array') and allowed investigations to begin to determine the size and layout of a potential wind farm within the AfL area.



Moor Vannin

Figure 1.1
Location of the Proposed Development and the Scoping Boundary

--- Jurisdictional Boundaries

Scoping Boundary

□ Offshore Electrical Connection Search Area

□ Terrestrial Electrical Connection Search Area

□ Offshore Array



Coordinate System: ETRS 1989 UTM Zone 30N

Scale@A3: 1:350,000

0 4.5 9 18 Kilometres

0 2 4 8 Nautical Miles

REV	REMARK	DATE
	First issue	27/09/2023

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Date: 27/09/2023 Author: Gary.baker Project: IMW01_Fig1.1_ScopingBoundary

Title: Scoping Boundary
Document no: IMW01_Fig1.1
Created by: CB
Checked by: AP
Approved by: SB



- 1.2.2.2 In 2016, the Applicant carried out a scoping exercise for the Moir Vannin Offshore Wind Farm (formerly the Isle of Man Offshore Wind Farm) and received a draft Scoping Opinion from the Isle of Man Government. However, as the Applicant now moves towards a consent application in 2025, a new scoping exercise is being carried out given the passage of time and the Applicant's approach to Proportionate EIA (see Annex 5.A, Proportionate EIA Position Paper).

1.3 Scheme overview and programme

1.3.1 Moir Vannin Offshore Wind Farm (The Whole Project)

- 1.3.1.1 The Applicant is proposing to develop the Moir Vannin Offshore Wind Farm. Within the Isle of Man's jurisdiction, the Moir Vannin Offshore Wind Farm includes both offshore and onshore infrastructure which are subject to separate consents further detailed in section 2 of Annex 5.C, Scoping Strategy. All parts of the Moir Vannin Offshore Wind Farm which form part of this Scoping Report are referred to collectively as the Proposed Development. All additional parts of the wind farm infrastructure and the Proposed Development are collectively referred to as The Whole Project, further detail is provided in section 3 of Annex 5.C, Scoping Strategy.
- 1.3.1.2 The promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one from the Applicant (for the Offshore Array) and one from Manx Utilities (for the Offshore Electrical Connection Cable(s) and Onshore Infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 1.3.1.3 The marine infrastructure of the Proposed Development includes the offshore generating stations (turbines and Array Cables) and transformer and convertor substations all approximately 11 km or more from Maughold Head at their closest point, and electrical cables and Supervisory Control and Data Acquisition (SCADA) cables to landfall in the Isle of Man. The onshore infrastructure of the Proposed Development includes an onshore substation and connection to the electricity transmission network in the Isle of Man, see section 5 of Annex 5.C, Scoping Strategy.
- 1.3.1.4 An Operations and Maintenance (O&M) base in the Isle of Man will also be explored and would be subject to a separate consent once the location and function of the facility has been determined, though is included within the Whole Project description (Chapter 3, Project Description) for completeness. The various constituent parts of the Whole Project are illustrated within Figure 1.2.
- 1.3.1.5 The Proposed Development will comprise 100 turbines, or fewer, in water depths of approximately 10 – 37 m. The Applicant is actively exploring opportunities for 80 MW to 100 MW of the generation to be supplied directly to the Isle of Man to contribute towards meeting its energy demands, with excess generated electricity to be exported (details of export options being considered are provided in 3.3.10 of Chapter 3, Project Description).
- 1.3.1.6 The Applicant is also proposing project infrastructure that will not be within the Isle of Man's Territorial Seas as part of the Whole Project. The exact specifications and

locations of such infrastructure are yet to be determined but will allow for the energy generated within the territory of the Isle of Man to be exported to potentially England, Wales and/ or Eire. This Whole Project infrastructure is referred to collectively as RtM options. These RtM options are being actively explored and progressed and once determined, will be subject to their own consents for the jurisdiction(s) in which they are situated. Further information on the RtM options of the Whole Project can be found in section 3.3.10 of the Chapter 3, Project Description.

- 1.3.1.7 Although these non-Isle of Man components are not subject to the scoping request to which this Scoping Report relates, detail on the assessment methodology and how Whole Project effects will be considered as part of the Environmental Statement (ES) is detailed within section 5.8.2 of Chapter 5, EIA Methodology.

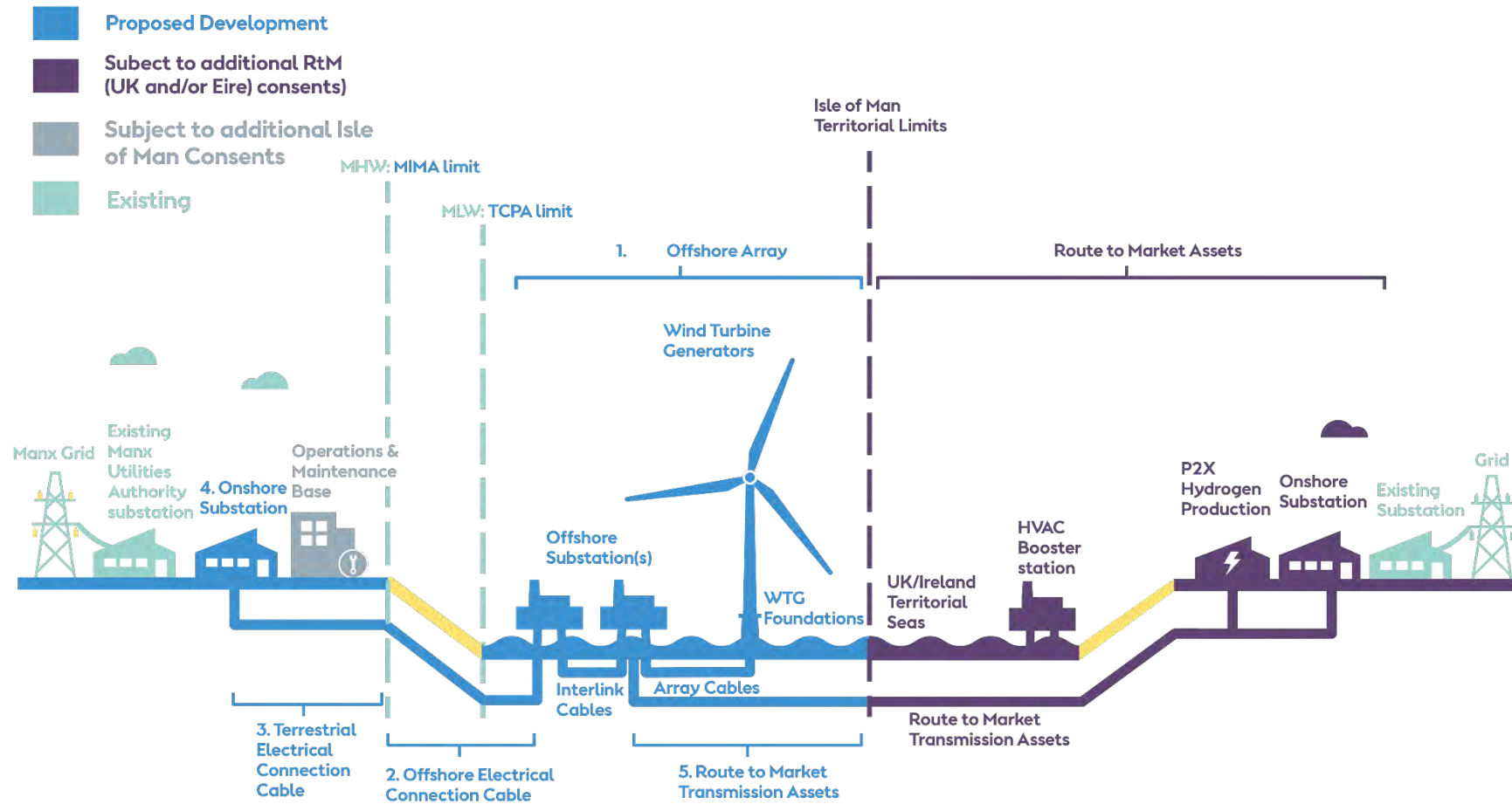


Figure 1.2: Moir Vannin Offshore Wind Farm Whole Project.

1.3.2 The Proposed Development

1.3.2.1 The Proposed Development, for which a Scoping Opinion is being sought, consists of the Offshore Array, the Offshore Electrical Connection Cable, the RtM Transmission Assets within the Offshore Array, the Terrestrial Electrical Connection Cable and the onshore substation (The Onshore Substation (OnSS) would be located in Douglas and will include all necessary electrical plant to meet the requirements of the Manx Grid and Grid Connection Cable(s) to the Isle of Man Substation). These project definitions and their associated infrastructure are detailed in the sections below.

Offshore Array

1.3.2.2 The Offshore Array consists of the generation (turbines and Array Cables) and transmission (Interlink Cables and Offshore Substations) asset infrastructure contained within the AfL area.

Offshore Electrical Connection Search Area

1.3.2.3 The Offshore Electrical Connection Search Area consists of the search area for the Electrical Cable(s) connecting the Offshore Array to landfall in the Isle of Man, including the SCADA cables from the turbines to a future O&M facility (subject to a separate consent process). This area will comprise the marine components of the Proposed Development which are contained wholly within the Isle of Man Territorial Sea.

Offshore Electrical Connection Cable

1.3.2.4 The Offshore Electrical Connection Cable consists of the Electrical Cable(s) connecting the Offshore Array to landfall in the Isle of Man, including the SCADA cables from the turbines, to be located within the Offshore Electrical Connection Search Area.

Terrestrial Electrical Cable Search Area

1.3.2.5 The search area for the Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid via an onshore substation.

Terrestrial Electrical Connection Cable

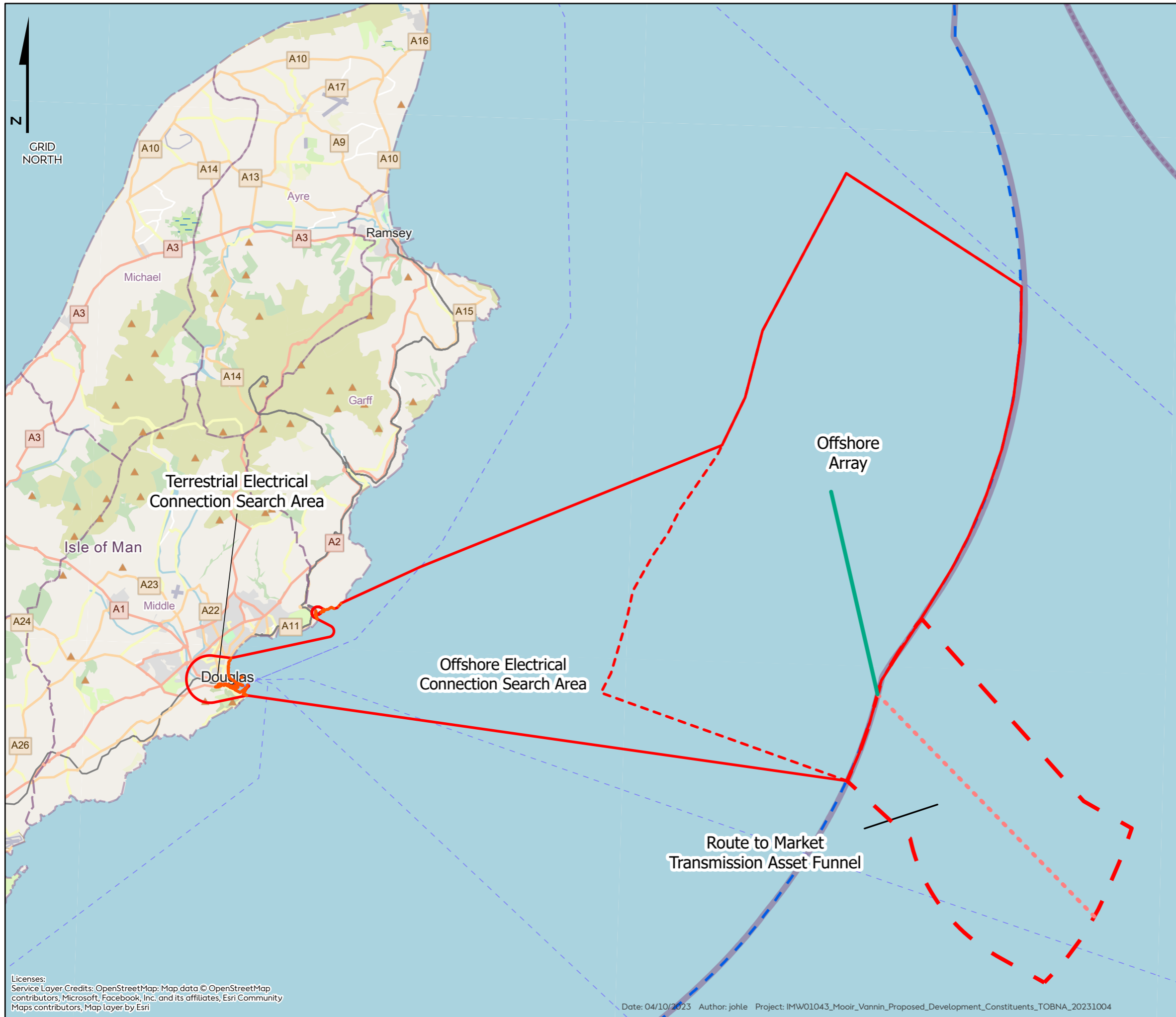
1.3.2.6 The Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid via an onshore substation.

Route to Market (RtM) Transmission Assets

1.3.2.7 The transmission assets associated with the Route to Market options situated within the Offshore Array and the Route to Market Transmission Asset Funnel.

1.3.3 RtM Transmission Asset Funnel

1.3.3.1 While not part of the Proposed Development, the RtM Transmission Asset Funnel is an area outside the Offshore Array within which the RtM transmission assets may exit the AfL area (e.g. Electrical Cables to National Grid in the UK) and terminate in other jurisdictions (e.g. Wales, England or Eire). Due to the adjacent and close proximity to the Proposed Development they are defined by way of their ability to result in cumulative and in-combination impacts upon the Isle of Man's Territorial seas. In addition to the Proposed Development, a Scoping Opinion is being sought on these potential impacts of the transmission assets but not for the assets themselves.



Moor Vannin

Figure 1.3: Moor Vannin Offshore Wind Farm and the Proposed Development constituents

- - - 12nm Territorial Sea Limits
- ▭ Scoping Boundary
- - - Route to Market Transmission Asset Funnel
- - - Mean High Water
- Indicative Route to Market Transmission Cable
 - Indicative Route to Market Transmission Assets (part of Proposed Development)
 - - - Indicative Route to Market Transmission Assets (not part of Proposed Development)



Coordinate System: British National Grid
 Scale@A3: 1:160,000

0 2 4 8 Kilometers

0 1 2 4 Nautical Miles

REV	REMARK	DATE
	First issue	04/10/2023

Figure 1.3: Moor Vannin Offshore Wind Farm and the Proposed Development constituents
 Document no: IMW01043
 Created by: JOHLE
 Checked by:
 Approved by: TOBNA



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1.3.4 Whole Project objectives

- 1.3.4.1 Offshore wind, as a source of renewable energy, offers a wide range of benefits from the perspectives of economic growth, energy security and decarbonisation. The Proposed Development would make a significant contribution to renewable energy supply and consequently help provide these benefits to the Isle of Man and globally. The strategic development of the project will increase this contribution to energy supply and help fulfil future increasing demand for renewable energy.
- 1.3.4.2 The primary drivers for the development of offshore wind energy are:
- The need to reduce greenhouse gas emissions;
 - The need for national energy security;
 - The need to maximise economic opportunities from energy infrastructure investment; and
 - The need to produce affordable energy.
- 1.3.4.3 The Climate Change Act 2021 commits the Isle of Man to reaching net zero greenhouse gas emissions by 2050. The Climate Change Act 2021 requires a statutory five-year Climate Change Plan to be in operation at all times. The Climate Change Plan for 2022 – 2027 (Council of Ministers, 2022) includes a deliverable to supply 100% of the Island's electricity from carbon neutral sources by 2030.
- 1.3.4.1 The Mooir Vannin Offshore Wind Farm will produce enough energy to meet the energy requirements of the Isle of Man and provides an opportunity for excess energy to be exported to the wider market in the UK and/or Eire, contributing significantly to the Isle of Man's statutory commitments to reaching net zero by 2050, and providing economic benefit to the Isle of Man. Various export options are being considered (see section 3.3.10 of Chapter 3, Project Description) including radial connection to the UK electrical grid, private wire connections to commercial and industrial partners, Power-to-X (P2X) solutions and/or a multi-purpose interconnector (MPI).
- 1.3.4.2 The consideration of P2X is driven by the production of green hydrogen (meaning H₂ produced by renewable energy) that could potentially facilitate the decarbonisation of industry. The consideration of an interconnector is to support UK and Irish Government policy terms and balance of the grid between the UK and Eire.

1.3.5 Timeline

- 1.3.5.4 The timeline of the Proposed Development is summarised in Figure 1.4. It is currently anticipated that an application for a Marine Infrastructure Consent (MIC) under the Marine Infrastructure Management Act 2016 (MIMA), for all parts of the Proposed Development seaward of Mean High Water (MHW) and an application for planning permission under the Town and Country Planning Act 1999 (TCPA), for all parts of the Proposed Development landward of Mean Low Water (MLW) will be required. Submission of the MIMA consent is anticipated in early Quarter 1 (Q1) of 2025, with the aim of receiving consent by the end of Q2 2026. The timeline for the other applications required for the Whole Project, including the TCPA for onshore infrastructure, is dependent on agreement between Manx Utilities and Mooir Vannin Offshore Wind Farm Limited, for the TCPA consent, and the consents and procedures of the jurisdiction(s) in which the infrastructure is to be situated.
- 1.3.5.5 The Applicant is aiming to begin construction in as early as 2030 and for the wind farm to be fully operational in by 2032, subject to the relevant consents being in place.



Figure 1.4: Moir Vannin Offshore Wind Farm anticipated timeline.

1.4 Purpose of this Scoping Report

- 1.4.1.1 To start the MIC and TCPA application process, the Applicant has prepared this EIA Scoping Report, which presents an initial consideration of the potential impacts associated with the construction, operation and maintenance, and eventual decommissioning of the Proposed Development.
- 1.4.1.2 This Scoping Report also seeks to ensure that a proportionate approach to EIA will be taken. The objectives of delivering proportionate EIA, as defined by the Institute of Environmental Management and Assessment (IEMA) (2017), are to:
- Drive collaborative action and understanding across the EIA community;
 - Focus assessments so their findings are accessible to all stakeholders;
 - Reduce uncertainty and risk within project consenting;
 - Save time and costs for developers, consenting authorities and consultees; and
 - Allow more time to be spent exploring the delivery of environmental improvements.
- 1.4.1.3 One of the key objectives for delivering proportionate EIA is to develop an approach to stakeholder engagement which becomes a core process running through the EIA, providing ongoing opportunities to define and redefine what information is of value and how it is made available to stakeholders. To support this proportionate approach, the Applicant has developed an Impacts Register (Annex 5.B) and a Commitments Register (Annex 3.A). Further information on the Applicant's proposed approach to delivering a proportionate EIA is detailed in the Proportionate EIA Position Paper (Annex 5.A).
- 1.4.1.4 The Impacts Register presents all impacts identified associated with the Proposed Development at scoping, along with a Likely Significant Effect (LSE) assessment of each individual impact in EIA terms. The Commitments Register outlines the early phase commitments that have been made by the Applicant as part of the Proposed Development, linked to the identified impacts within the Impacts Register.
- 1.4.1.5 In the interests of focusing on process, the impacts within this Scoping Report are identified as either LSE or No LSE. Impacts for which LSE are identified will be assessed as part of the EIA and presented in the ES to accompany the consent application. For those impacts identified as No LSE, subsequent supporting evidence will be provided to the relevant stakeholders as part of the Evidence Plan Process to support the conclusion of No LSE, further detail on the process is available in section 7 of Annex 5.C Scoping Strategy. This will enable Isle of Man stakeholders to focus on their review of the process for EIA and to highlight any additional receptors and/ or impacts to be assessed as part of the EIA process.

1.5 The Scoping Boundary

- 1.5.1.1 Figure 1.1 illustrates the Scoping Boundary that has been used to inform this Scoping Report. The Scoping Boundary is defined as the area within which the Proposed Development will be located. The Scoping Boundary combines the Offshore Array, the Offshore Electrical Connection Search Area and the Terrestrial Electrical Connection Cable Search Area. Within this Scoping Boundary, the Applicant has depicted an indicative cable route for the Offshore Electrical Connection Cable. It should be noted that this indicative route is for demonstration purposes only, is subject to change and will be refined as the application progresses. Further information on the Scoping Boundary and indicative cable routes can be found in Chapter 4, Site Selection & Consideration of Alternatives.

1.5.2 Submission of the Scoping Report

1.5.2.1 The Applicant has prepared this Scoping Report to support the proposed consent applications for the Proposed Development. Whilst the consenting strategy may be subject to further refinement, it is currently anticipated that the following consent applications will be submitted:

- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- Application for planning permission (Onshore Planning Permission) under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.

1.5.2.2 The submission of one EIA covering the onshore and offshore elements of the Proposed Development will ensure all stakeholders are informed of the Likely Significant Effects of the Proposed Development when determining the consent applications.

1.5.2.3 The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

1.5.2.4 This Scoping Report contains the following information:

- A description of the Proposed Development, including its location and technical capacity;
- An explanation of the anticipated Likely Significant Effects (including transboundary screening) on the environment resulting from the construction, operation and maintenance and eventual decommissioning of the Proposed Development; and
- Such other information the Applicant considers material (including details on consultation, the currently proposed approach to assessment, and an indication of the further information and evidence that will be provided to stakeholders in order to agree impacts where no LSE is identified).

1.5.2.5 Whilst the Regulations to support MIMA - are not yet published, it is expected that these will contain transitional provisions, as envisaged by section 61 (transitional provisions) of MIMA. The intention of section 61 is clear, and it is open to the Department of Infrastructure (Dol) to apply preparatory actions already carried out (such as preparation of this Scoping Report) to have effect as if done under MIMA -.

1.5.2.6 On that basis, should the Regulations to support MIMA contain a requirement for the preparation and submission of a Scoping Report, the Applicant expects that this Scoping Report can be relied upon to discharge that obligation, and that there would be no need to re-scope. The Applicant would welcome confirmation of that proposed approach, to ensure no unnecessary delay to the project.

1.5.3 Request for a Scoping Opinion

1.5.3.4 As outlined in the Scoping Strategy, Annex 5.C, this Scoping Report supports a request for an EIA Scoping Opinion from Dol and Territorial Seas Committee (TSC) and it is anticipated that transitional provisions will enable this to have effect under the secondary legislation for MIMA which is anticipated to be forthcoming.

1.5.3.5 Whilst not yet in force, in accordance with the timetable set out in section 10 of MIMA, Dol are required to issue a Scoping Opinion before the end of 30 working days. It is anticipated that the Scoping Opinion the Applicant receives from the Dol will contain

a compilation of responses to this document from statutory consultees and other key stakeholders, which will guide the Applicant in progressing the EIA and consent applications for the Proposed Development.

- 1.5.3.6 The Applicant requests that the DoI sets out in writing its opinion as to the scope and level of detail of information to be provided in the ES and application documents to be provided as part of the MIMA application and the application for planning permission under the TCPA.

1.6 The Moir Vannin Offshore Wind Farm EIA team

- 1.6.1.1 This Scoping Report and the ES that will follow is being led by GoBe Consultants Ltd (GoBe) working closely with SLR Consulting Ltd (SLR), under the direction of the Applicant team. In addition, a number of specialist consultancies are providing expert input into the EIA topic chapters, as indicated in Table 1.1.
- 1.6.1.2 The Scoping Report and ES will be prepared by competent experts and the ES will outline the relevant expertise or qualifications of the experts.
- 1.6.1.3 GoBe’s EIA activities and ESs are accredited by IEMA under the EIA Quality Mark Scheme. This demonstrates GoBe Consultants’ commitment to ensuring EIA is undertaken at high quality and in accordance with best practice.

Table 1.1: Authors of the Moir Vannin Offshore Wind Farm’s ES chapters.

Topic	Author
Marine Geology, Oceanography & Physical Processes	GoBe Consultants Ltd and Metocean Works Ltd
Marine Water & Sediment Quality	GoBe Ltd
Offshore Ornithology	GoBe Ltd
Benthic Subtidal & Intertidal Ecology	GoBe Ltd
Marine Mammals & Megafauna	APEM Ltd
Fish & Shellfish Ecology	GoBe Ltd
Commercial Fisheries	Poseidon Aquatic Resource Management Ltd
Shipping & Navigation	Anatec Ltd
Seascape, Landscape & Visual Impact Assessment	Optimised Environments Ltd(OPEN)
Offshore Archaeology & Cultural Heritage	Wessex Archaeology Ltd
Military & Civil Aviation	Cyrrus Ltd
Other Marine Users & Activities	GoBe Ltd
Ecology	SLR Consulting Ltd
Geology & Ground Conditions	SLR Consulting Ltd
Land Use	SLR Consulting Ltd
Landscape & Visual Impact Assessment	Optimised Environments Limited (OPEN)
Traffic & Transport	SLR Consulting Ltd
Onshore Archaeology & Cultural Heritage	SLR Consulting Ltd
Noise & Vibration	SLR Consulting Ltd
Air Quality	SLR Consulting Ltd
Hydrology & Flood Risk	SLR Consulting Ltd
Climate Change	SLR Consulting Ltd
Socio-Economics	Hatch Ltd

Topic	Author
Major Accidents & Disasters	SLR Consulting Ltd
Human Health	SLR Consulting Ltd
Resources & Waste Management	SLR Consulting Ltd

1.7 Structure of the Scoping Report

1.7.1.1 This Scoping Report is split into five volumes and one set of annexes that group topic sections. The contents and order of those volumes and annexes are detailed in Table 1.2.

Table 1.2: Structure of the Scoping Report.

Volume	Chapter number	Chapter name
Volume 1: Introductory Chapters	1	Introduction
	2	Legislation, Policy & Guidance
	3	Project Description
	4	Site Selection & Consideration of Alternatives
	5	EIA Methodology
	6	Consultation
Volume 2: Offshore Chapters	7	Marine Geology, Oceanography & Physical Processes
	8	Marine Water & Sediment Quality
	9	Offshore Ornithology
	10	Benthic Subtidal & Intertidal Ecology
	11	Marine Mammals & Megafauna
	12	Fish & Shellfish Ecology
	13	Commercial Fisheries
	14	Shipping & Navigation
	15	Seascape, Landscape & Visual Impact Assessment
	16	Offshore Archaeology & Cultural Heritage
	17	Military & Civil Aviation
	18	Other Marine Users & Activities
Volume 3: Onshore Chapters	19	Ecology
	20	Land Use & Ground Conditions
	21	Traffic & Transport
	22	Onshore Archaeology & Heritage
	23	Noise & Vibration
	24	Air Quality
	25	Hydrology, Hydrogeology & Flood Risk
	26	Landscape and Visual Impact Assessment
Volume 4: Overarching Chapters	27	Climate Change
	28	Socioeconomics & Tourism
	29	Major Accidents & Disasters

Volume	Chapter number	Chapter name
	30	Human Health & Wellbeing
	31	Materials & Waste
	32	Protected Sites Assessment Strategy
	33	Summary & Conclusion
	34	References
Volume 5: Annexes	3.A	Project Description Annex A: Commitments Register
	5.A	EIA Methodology Annex A: Proportionate EIA Position Paper
	5.B	EIA Methodology Annex B: Impacts Register
	5.C	EIA Methodology Annex C: Scoping Strategy
	5.D	EIA Methodology Annex D: Transboundary Screening
	6.A	Community Engagement, Consultation & Action Strategy
	20.A	Land Use Impact Magnitude & Receptor Sensitivity
	32.A	Protected Sites Assessment Strategy Annex A: Transboundary PSA Strategy & Screening

1.8 Questions to Consultees

- Question 1.1: Is it clear which infrastructure and associated activities a Scoping Opinion is being sought for?

2 Legislation, Policy & Guidance

2.1 Introduction

- 2.1.1.1 This Chapter sets out the legislation and policy context for the carrying out of the EIA for the Proposed Development (a definition of which is provided within Chapter 3, Project Description). It provides details of the legislation under which an application for a MIC under MIMA and planning permission under TCPA will be sought by Moir Vannin Offshore Wind Farm Limited, hereafter the Applicant, the policy framework against which the application will be considered, and the relevant guidance that will be followed.
- 2.1.1.2 A full list of the relevant legislation, authorisations and permits associated with the delivery of the Proposed Development will be provided in the ES produced to support the MIC and TCPA applications and topic specific legislation, policy and guidance is summarised in each topic chapter of this Scoping Report. The Applicant will also develop a Planning Statement that will be submitted as part of the MIC and TCPA applications that will identify the need for the Proposed Development alongside how the Proposed Development accords with relevant planning policies.
- 2.1.1.3 It should be noted that this Chapter details the policy, legislation and guidance context to the EIA that will accompany the MIC and TCPA applications for the Proposed Development (namely those assets that are within Isle of Man's territory and for which a Scoping Opinion is being sought) and not the Whole Project, which will include components requiring consents outside of the Isle of Man's jurisdiction and for which a Scoping Opinion is not being sought. These non-Manx components will be subject to separate consent application(s) made subject to legislative and policy context relevant to the jurisdiction in which they are situated.

2.2 Legislation

- 2.2.1.1 The legislation under which a developer can seek consent for the elements of an offshore wind farm seaward of MHW in the Isle of Man Territorial Seas is currently in a transitionary period, because the provisions of MIMA are not yet in operation, and secondary legislation under MIMA that will set out how the process will operate has not yet been made.
- 2.2.1.2 MIMA extends to MHW and as such, does not cover the entirety of the Proposed Development. Therefore, the Applicant intends to apply for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 2.2.1.3 The current and proposed future consenting regimes are described below, along with the Applicant's intended approach to obtaining consent for the Proposed Development.

2.2.2 Current consenting regime

- 2.2.2.1 At the time of writing this Scoping Report, the main consents required under the existing consenting regime that applies to the Proposed Development are:
- Electricity Act 1996 consent;
 - Harbours Act 2010 consent;
 - Town and Country Planning Act 1999 planning permission;
 - Submarine Cables Act 2003 authorisation; and
 - Water Pollution Act 1993 licence.

2.2.3 Proposed consenting regime

- 2.2.3.1 In 2016, MIMA (Isle of Man Government, 2016a) was introduced to provide a streamlined decision-making process for development proposals within the Isle of Man Territorial Seas. MIMA was enacted in 2016 but its provisions are not yet in operation. Its secondary legislative provisions have not yet been drafted at the time of writing and so are also not in operation (as of the date of submission of this Scoping Report). The Applicant is of the understanding that MIMA will become operational between the date of the Scoping Opinion and the submission of the MIC application.
- 2.2.3.2 Once in operation, MIMA will remove the requirement for consent under the current legislation (as described in section 2.2.2) where MIMA applies (up to MHW). It is the Applicant's intention to submit an application for MIC for all parts of the Proposed Development seaward of MHW under MIMA once it is operational and the relevant secondary legislation has been enacted.
- 2.2.3.3 MIMA defines a list of "*controlled marine activities*" which it is applicable to. The Proposed Development is considered to fall under section 6(1)(a): 'offshore renewable energy generation' and section 6(1)(c): 'laying of submarine cables'. Section 6(2) of MIMA also confirms that activities are "*associated marine activities*" if they are required in connection with any of the controlled marine activities listed in section 6(1).
- 2.2.3.4 MIMA is applicable to infrastructure up to the point of MHW and therefore does not allow for the provision of consent of the terrestrial elements of the Proposed Development above MHW and a separate planning permission under the TCPA will be sought for all parts of the Proposed Development landward of MLW.
- 2.2.3.5 There is also a requirement for pre-application consultation under MIMA (Section 11), and a prescribed list of parties that must be consulted with. The Applicant has set out its approach to consultation, and how the requirements of this section are met in Chapter 6, Consultation.

2.3 Policy

- 2.3.1.1 The EIA will consider any Marine Plan or Marine Policy Statement adopted pursuant to Section 51 of MIMA and the local planning policy applicable in the area of landfall included within the Scoping Boundary. This consists of the 'Area Plan for the East' (adopted in 2020) (Isle of Man Government, 2020) which covers the Douglas area and the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a). In hierarchical terms, the Strategic Plan sits above all Area Plans in that the proposal in any Area Plans shall be in general conformity with the Strategic Plan. The Area Plan for the East provides an elaboration on the broader policies of the Strategic Plan, tailored towards its specific areas of coverage.
- 2.3.1.2 The EIA will also be informed by relevant parts of the England and Wales National Policy Statements (NPS) (DECC, 2011a, 2011b and 2011c), Draft NPSs (DESNZ, 2023a, 2023b and 2023c) and the UK Marine Policy Statement (DEFRA, 2011) in accordance with Appendix 5 of the Isle of Man Strategic Plan 2016. This Plan confirms that "*Installations for the harnessing of wind power for energy production*" require an EIA in every case and states that until such point that a Planning Policy Statement that addresses how DoI would address applications subject to EIAs is published, current practice from England and Wales should be followed.

2.4 International Obligations

- 2.4.1.1 The Isle of Man is a signatory of various international conventions. The conventions of relevance to this project are listed below.

2.4.2 The Convention for the Protection of the Marine Environment of the North East Atlantic ('OSPAR' Convention)

2.4.2.1 The OSPAR Convention provides a list of species and habitats that are threatened or declining. These species and habitats will be considered within the relevant sections of the EIA where the potential for LSE to these receptors as a result of the Proposed Development is identified.

2.4.3 The Convention on Wetlands ('Ramsar' Convention)

2.4.3.1 The Ramsar Convention is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources. On the Isle of Man, the Ballaugh Curragh site is a designated Ramsar wetland of international importance. This site will be considered within the Protected Sites Assessment (PSA) which will accompany the ES (further information can be found in Chapter 32, Protected Sites Assessment Strategy).

2.4.4 The Convention on Biological Diversity (CBD)

2.4.4.1 In 2012, the Isle of Man joined the CBD. Biodiversity Action Plans (BAPs) and Biodiversity Strategies are recognised tools of the CBD and the Isle of Man has developed a Biodiversity Strategy (and has stated its intention to develop associated Action Plans) to address the conservation of vulnerable and declining species and habitats, as per the aims of the CBD. Effects to biodiversity resulting from the Proposed Development will be assessed within the Onshore Ecology chapter of the ES (for which the scoping chapter is in Chapter 19 of this Scoping Report) and a Biodiversity Technical Advisory Group will be set up as part of the Evidence Plan Process.

2.4.5 The Convention on the Conservation of Migratory Species of Wild Animals ('Bonn' Convention)

2.4.5.1 The Bonn Convention aims to conserve migratory species. The convention splits species into Appendix I (threatened migratory species) and Appendix II (species requiring international co-operation). Species relevant to the Isle of Man are leatherback turtle which is listed as an Appendix I species and basking shark, porbeagle shark and spurdog that are listed as Appendix II. These species will be considered in the Fish & Shellfish Ecology Chapter of the ES (for which the scoping chapter is in Chapter 12 of this Scoping Report).

2.4.6 The Convention on the Conservation of European Wildlife and Natural Habitats ('Bern' Convention)

2.4.6.1 The Bern Convention aims to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase co-operation between contracting parties, and to regulate the exploitation of migratory species listed in Appendix III. These species will be considered within the relevant sections of the EIA, including in this Scoping Report.

2.4.7 The Convention on Environmental Impact Assessment in a Transboundary Context ('Espoo' Convention)

2.4.7.1 The Espoo Convention sets out the obligations of signatories to assess the environmental impacts of certain activities at an early stage of the planning process. It also provides the general obligation of signatories to notify and consult each other on all major projects under consideration that are likely to have a significant transboundary environmental impact. The Applicant will identify and consider transboundary impacts within the EIA and has provided a Transboundary Screening annex (Annex 5.D) to this Scoping Report.

2.5 Guidance

- 2.5.1.1 The Applicant acknowledges that the Isle of Man has a close relationship with the UK and links with the European Union (EU). Accordingly, where there is no Manx guidance, regard will be given where appropriate to advice published in the UK and the EU, subject to consultation with and the agreement of the DoI.
- 2.5.1.2 Through the experience of the development of numerous offshore wind farm projects in UK waters, relevant stakeholders and policy makers have developed and published technical guidance which can be applied to offshore wind farms being developed in the Isle of Man, subject to consultation with and the agreement of the DoI.
- 2.5.1.3 Individual topic chapters within this Scoping Report list out the corresponding relevant topic-specific legislation, policy and guidance. The following overarching and general guidance are deemed relevant:
- Planning Inspectorate (PINS) Advice Notes 3, 7, 9, 11, 12 and 17 (PINS, 2017a, 2017b, 2018, 2019, 2020a, 2020b);
 - Offshore Wind Farms: Guidance Note for Environmental Impact Assessment in Respect of Food and Environment Protection Act 1985 and Coastal Protection Act 1949 requirements (Cefas, 2004);
 - Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Cefas, 2012);
 - Assessment of the environmental impact of offshore wind-farms (OSPAR Commission, 2008);
 - Cumulative Impact Assessment Guidelines - Guiding Principles For Cumulative Impact Assessment in Offshore Wind Farms (RenewableUK, 2013);
 - Guidelines for Environmental Impact Assessment in the UK and Ireland. Terrestrial Freshwater, Coastal and Marine (CIEEM, 2018);
 - Guidelines for Environmental Impact Assessment in Britain and Ireland. Marine and Coastal. Final Document, August 2010 (CIEEM, 2010);
 - Guide for Developers for Proposed Works in the Isle of Man Territorial Seas (Isle of Man Government, 2014a);
 - Assessment of the environmental impacts of cables (OSPAR Commission, 2009);
 - Manx Marine Environmental Assessment Report (Isle of Man Government, 2014b); and
 - Isle of Man Climate Change Plan 2022-2027 (Council of Ministers, 2022).
- 2.5.1.4 The Applicant will develop the EIA in accordance with industry best practice guidance including but not limited to:
- Guidelines for Environmental Impact Assessment (IEMA, 2004);
 - Guide to Shaping Quality Development (IEMA, 2016); and
 - Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017).

2.6 Project Need

- 2.6.1.1 The Climate Change Act 2021 commits the Isle of Man to reaching net zero greenhouse gas emissions by 2050. The Proposed Development will significantly

contribute towards this commitment through the generation and delivery of renewable energy to the Isle of Man and will produce enough energy to meet the full energy demands of the island.

- 2.6.1.2 As part of the Climate Change Act 2021, a statutory five-year Climate Change Plan must be in operation at all times. The current Climate Change Plan for 2022 – 2027 includes a series of deliverables in order to ensure the requirements of the Climate Change Act 2021 are met. The Climate Change Plan includes a deliverable to supply 100% of the Isle of Man's electricity from carbon neutral sources by 2030.
- 2.6.1.3 As part of its role in exploring routes to the government's net zero targets, the Department of Environment, Food & Agriculture (DEFA) have developed a 2023 Energy Strategy. The key strategic aims of this strategy are:
- To provide support to the delivery of Our Island Plan and the economic strategy;
 - To provide support to the delivery of the Island's net zero targets;
 - To enable the transition of energy generation to occur in an economically efficient manner, when considering the economy as a whole;
 - To ensure the energy transition to occur in a manner that is fair and equitable;
 - To ensure that people and businesses are able to benefit from decarbonisation;
 - To make greater use of our own energy resources;
 - To increase energy independence; and
 - To maintain the Island's existing levels of power system resilience.
- 2.6.1.4 The Energy Strategy also includes the following as policy principles:
- We will increase our energy independence and security through on Island renewables and carbon neutral energy generation;
 - We will optimise the level of on-Island renewables and carbon neutral energy generation;
 - We will work to deliver offshore wind and scope out a future licencing round for offshore wind; and
 - We will enable consumers to take advantage of the net zero transition.
- 2.6.1.5 Under the current anticipated timeline, the Proposed Development will significantly contribute to the commitments of the Climate Change Act 2021 whilst aligning with the strategic aims and policy principles of the Energy Strategy.
- 2.6.1.6 At the international treaty level, the Paris Agreement, a legally binding treaty to limit the global temperature increases to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, was extended to the Isle of Man in March 2023. By exporting excess electricity to neighbouring jurisdictions, the Whole Project aligns with the aims of the Paris Agreement, contributing to global decarbonisation to limit global temperature increases.

2.7 Questions to Consultees

- Question 2.1: Are you satisfied that all relevant overarching legislation, policy and guidance has been identified within this Chapter (noting that topic specific legislation, policy and guidance are noted within those topic chapters)?;

- Question 2.2: Can DoI and DEFA confirm the EIA process to be followed for the TCPA and whether a Planning Policy Statement in relation to EIAs is likely to be passed during the pre-application phase (Application in Q1 2025)?; and

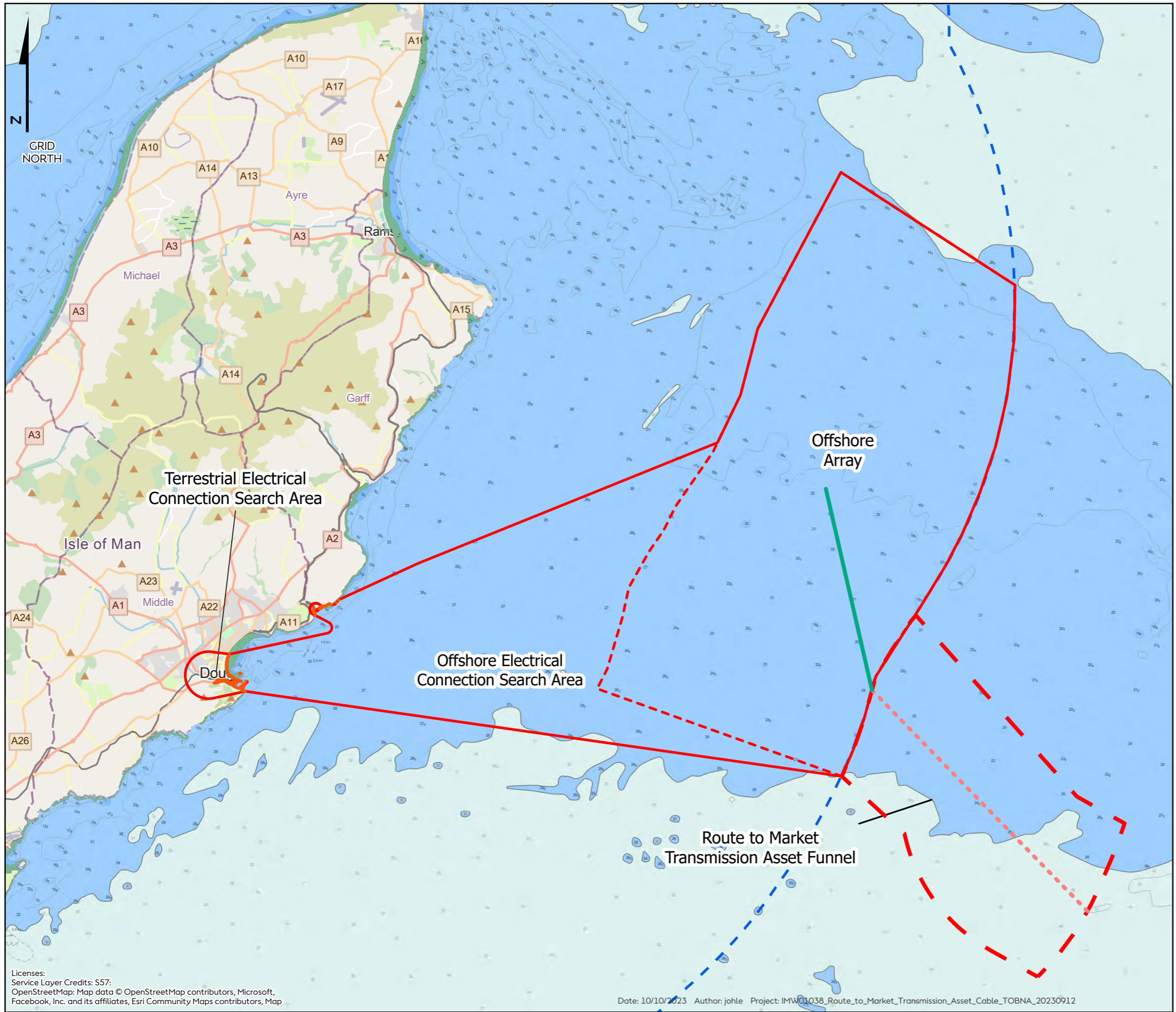
3 Project Description

3.1 Introduction

- 3.1.1.1 This Chapter provides a description of the design and activities associated with the construction, operation, maintenance and decommissioning of the Proposed Development, defined as the infrastructure assets within the Offshore Array (wind turbines, Array Cables, Interlink Cables, Offshore Substations and the RtM Transmission Assets), the Offshore and Terrestrial Electrical Connection Cables and the Onshore Substation (OnSS), all contained within Isle of Man jurisdiction for which a Scoping Opinion is being sought. In addition to the Proposed Development, a Scoping Opinion is being sought for the potential cumulative and in-combination impacts upon receptors within Isle of Man Territorial Seas that could arise from the RtM Transmission Assets within the RtM Transmission Asset Funnel located outside of Isle of Man Territorial Seas (see Figure 3.1).
- 3.1.1.2 The Applicant is evaluating RtM options for the Proposed Development, which will include assets outside the Isle of Man jurisdiction that make landfall and grid connection in other jurisdictions (e.g. Wales, England and/ or Eire) that are subject to separate consents. Operation & Maintenance (O&M) facilities in the Isle of Man are additionally being considered which are subject to a separate Isle of Man consent. This Project Description describes these RtM and O&M assets for the purpose of defining and understanding 'The Whole Project', hereafter referred to as the "Moor Vannin Offshore Wind Farm" (see Figure 3.2), to ensure the application considers all aspects of the development. However, it should be noted that a Scoping Opinion for those assets outside the Isle of Man jurisdiction are not being sought.
- 3.1.1.3 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 3.1.1.4 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure).
- 3.1.1.5 The Proposed Development is at an early stage in development, and the 'Design Envelope' approach, described further in section 3.3, has been used to include sufficient flexibility to accommodate further project refinement during detailed design. This Chapter therefore sets out a series of options and parameters for which maximum values are used to define a Maximum Design Scenario (MDS) for the Proposed Development. The final design will be refined after consent has been granted from within the parameters stated within this Project Description, with the final project being less than or equal to the MDS assessed.

3.1.1.6 This Project Description sets out:

- Moir Vannin Offshore Wind Farm overview (see section 3.2);
 - Proposed Development (see section 3.3);
 - O&M Facilities (see section 3.3.9); and
 - Route to Market Options (see section 3.3.10).
- Design envelope approach (see section 3.4);
- Offshore infrastructure (see section 3.5);
- Onshore infrastructure (see section 3.6);
- Construction Programme (see section 3.7);
- Operation, maintenance and decommissioning (see section 3.8);
- Commitments (see section 3.9); and
- Consultation (see Chapter 6).



Moor Vannin

Figure 3.1: Scoping Boundary for the Proposed Development with Route to Market Transmission Assets

- 12nm Territorial Sea Limits
- Scoping Boundary
- Route to Market Transmission Asset Funnel
- Mean High Water
- Indicative Route to Market Transmission Cable
 - Indicative Route to Market Transmission Assets (part of Proposed Development)
 - Indicative Route to Market Transmission Assets (not part of Proposed Development)



Coordinate System: British National Grid
 Scale@A3: 1:160,000

0 2 4 8 Kilometers
 0 1 2 4 Nautical Miles

REV	REMARK	DATE
	First issue	12/09/2023

Figure 3.1: Scoping Boundary for the Proposed Development with Route to Market Transmission Assets
 Document no: IMW01038
 Created by: JOHLE
 Checked by:
 Approved by: TOBNA



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3.2 Moir Vannin Offshore Wind Farm Overview

3.2.1.4 This overview provides a description of the Moir Vannin Offshore Wind Farm (the 'Whole Project' as illustrated in Figure 3.2) which can be considered as three constituent parts:

- The Proposed Development: located wholly within the Isle of Man jurisdiction and made up of the components for which a Scoping Opinion is being sought. An overview of the infrastructure that makes up the Proposed Development is provided in section 3.3 with the MDS for each asset provided in section 3.5 (offshore) and section 3.6 (onshore) and accompanying Construction programme in section 3.7.
- The Operations and Maintenance facilities: located within the Isle of Man jurisdiction, although subject to a separate Isle of Man consent (TCPA) and therefore not part of the infrastructure to which a Scoping Opinion is being sought. The MDS for these facilities is provided in section 3.3.9.
- The Route to Market (RtM) assets: located outside of the Isle of Man jurisdiction (with the exception of the transmission assets located within the Offshore Array that are considered part of the Proposed Development) with assets that potentially terminate in either the UK or Eire that are subject to additional UK and/ or Eire consents and therefore not part of the infrastructure to which a Scoping Opinion is being sought. Due to the proximity of the transmission assets within the RtM Transmission Asset Funnel to the Isle of Man Territorial Seas, a Scoping Opinion is being sought for the potential cumulative and in-combination impacts upon Isle of Man receptors that could arise from these assets in particular. The RtM options are further described in section 3.3.10.

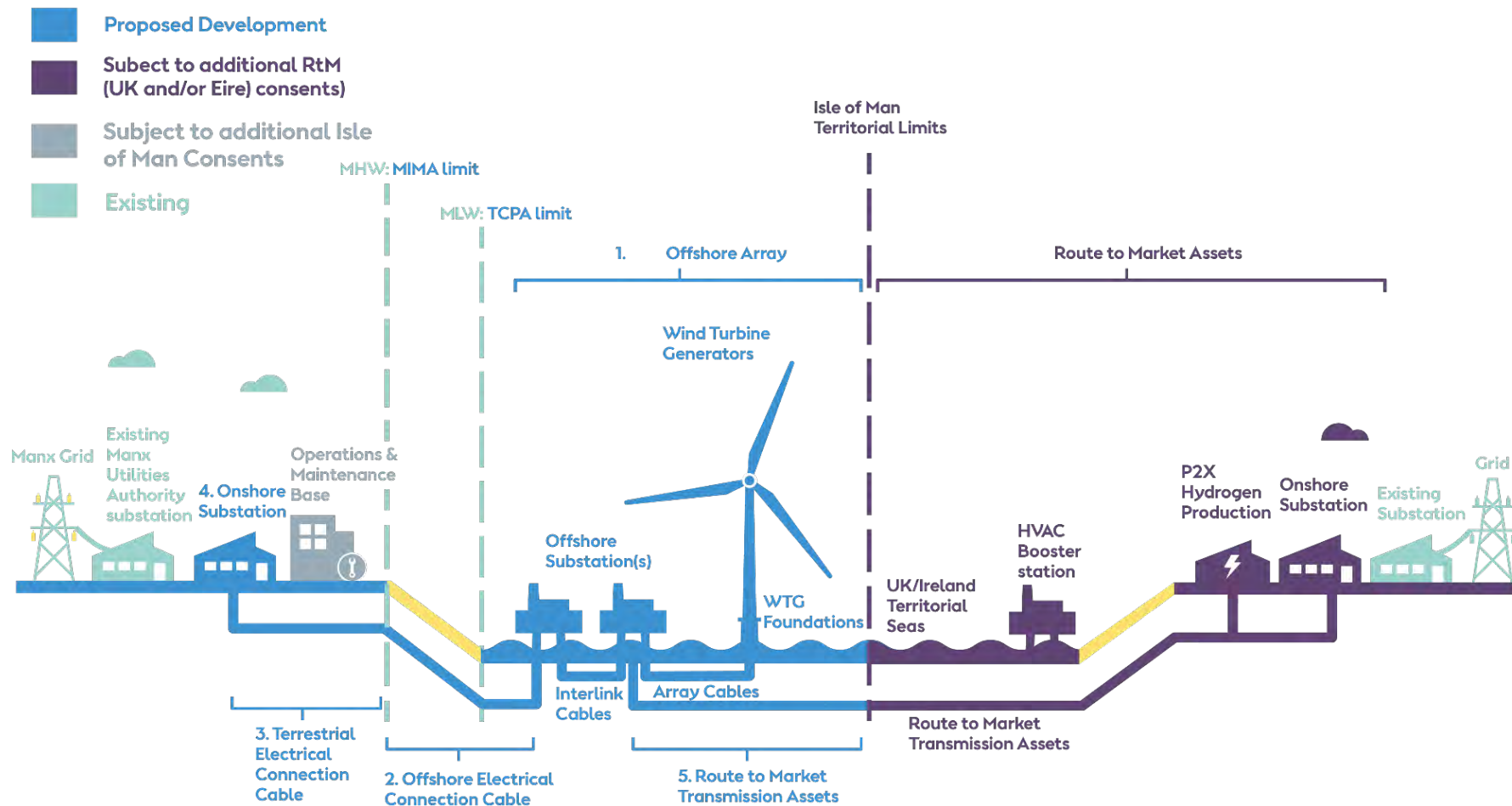


Figure 3.2: The Proposed Development (blue), the O&M facilities subject to separate Isle of Man consent (grey) and the RtM Assets also subject to a separate consent (purple) comprising the Moir Vannin Offshore Wind Farm (the ‘Whole Project’). The Isle of Man’s MHW mark defines the upper boundary of MIMA, and the MLW mark defines the lower boundary of the TCPA.

Moor Vannin

3.3 The Proposed Development

3.3.1.4 The Proposed Development sits wholly within the Scoping Boundary and can be broadly separated into the five components listed below, as shown in Figure 3.2 and further described in Table 3.1:

- The “Offshore Array”: The generation (turbines and Array Cables) and transmission (Interlink Cables and Offshore Substations) asset infrastructure contained within the Agreement for Lease (AfL) area;
- The “Offshore Electrical Connection Cable”: The Electrical Cable(s) connecting the Offshore Array to landfall in the Isle of Man, including the SCADA cables from the turbines, to be located within the Offshore Electrical Connection Search Area;
- The “Terrestrial Electrical Connection Cable”: Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid;
- Onshore Substation (OnSS): A substation housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid; and
- The “Route to Market (RtM) Transmission Assets”: Only the transmission assets associated with the RtM options that are situated within the Offshore Array, as illustrated in Figure 3.1.

Table 3.1: The Proposed Development Key Components.

The Proposed Development Components	Assets	Description
Offshore Array	Wind Turbine Generators (MDS provided in section 3.3.4)	The Wind Turbine Generators (WTGs) convert wind energy into electricity. WTGs typically have three rotor blades, a nacelle (housing transformers, power electronics, control equipment and in some cases gearboxes), a tower and a horizontal rotor axis. As WTC technology is continuously improved, the exact model will be selected post-consent from the range of models available at the point of procurement.
	WTG Foundations (MDS provided in section 3.5.4)	The WTGs will be permanently attached to the seabed with foundation structures, typically fabricated from steel or concrete. The different foundation designs under consideration are described further in this Project Description.
	Array cables (MDS provided in section 3.5.5)	Subsea Array Cables buried in the seabed connect all WTGs in strings to an offshore substation(s).
	Offshore substation(s) and Interlink Cables (MDS provided in section 3.5.5)	An offshore substation is a platform that converts the power from WTGs to higher voltages (Offshore Transformer Substation) to transmit the power more efficiently (by reducing electrical losses) to shore. One of the substations

The Proposed Development Components	Assets	Description
		<p>may be used as an offshore Operation & Maintenance (O&M) base.</p> <p>In order to improve the reliability of the transmission system, Interlink Cables may be installed connecting the Offshore Substations to each other.</p>
	<p>Scour, cable crossings and cable protection (MDS provided in section 3.5.5)</p>	<p>Scour protection involves the placement of rock and other materials on the seabed to minimise scour from current and wave action around foundation structures protecting the seabed and keeping the asset secure.</p> <p>Cable crossings involve the crossing of an existing asset (such as a 3rd party cable/pipeline) via the placement of a separation layer, laying of the cable then placement of cable protection.</p> <p>Where cables can't be buried (due to cable crossings or stiff sediments etc.) the cable will be protected with a hard-protective layer (such as rock or concrete mattresses) to ensure that the cables remain secure, are not damaged and do not become a hazard to other sea users.</p>
<p>Offshore Electrical Connection Cables (MDS provided in section 3.5.5)</p>	<p>Electrical Cables (MDS provided in section 3.5.5)</p>	<p>Subsea export and SCADA cables buried in the seabed transport the power from the Offshore Substations to the onshore substation and Operations and Maintenance base. Cables will be routed to avoid major seabed obstacles and minimise electrical losses. Cables will be delivered in sections and jointed in-situ.</p>
	<p>Scour, cable crossings and cable protection (MDS provided in section 3.5.5)</p>	<p>Scour protection involves the placement of rock and other materials on the seabed to minimise scour from current and wave action around foundation structures and electrical cables protecting the seabed and keeping the asset secure.</p> <p>Where cables cannot be buried (due to cable crossings or stiff sediments etc.) the cable will be protected with a hard-protective layer (such as rock or concrete mattresses) to ensure that the cables remain secure, are not damaged and do not become a hazard to other sea users.</p>
<p>Terrestrial Electrical Connection Cables (MDS provided in section 3.6.2)</p>		<p>Onshore export cables buried in the ground transport power to the OnSS. Cables will be delivered in sections and protected (e.g. via burial in trenches), which will subsequently be reinstated to pre-existing condition as far as reasonably practical. Cable sections will be connected within jointing bays.</p>
<p>Onshore Substation (OnSS) (MDS provided in section 3.6.3)</p>		<p>The OnSS would be located in Douglas and will include all necessary electrical plant to meet the requirements of the Manx Grid and Grid Connection Cable(s) to the Isle of Man Substation.</p>

The Proposed Development Components	Assets	Description
Route to Market (RtM) Transmission Assets (MDS provided in section 3.3.8)		The transmission assets associated with the RtM options situated within the Offshore Array, that will transport power out of the Offshore Array via the RtM Transmission Asset Funnel towards other jurisdictions where they terminate. Note that only the portion of the RtM Transmission Assets that are located within the Offshore Array are part of the Proposed Development.

3.3.2 Transmission technology

3.3.2.4 There are two transmission technologies being considered for the Moir Vannin Offshore Wind Farm, defined by the type of current: High Voltage Alternating Current (HVAC) and High Voltage Direct Current (HVDC). The Array Cables and Electrical Connection Cables of the Proposed Development will be HVAC, whilst the transmission types for the RtM Transmission Assets will be confirmed at a later stage, during detailed design and procurement, based on a range of factors including project economics and technology risk.

3.3.3 Proposed Development Location

3.3.3.4 The Proposed Development location is shown in Figure 3.2 and the components detailed in Table 3.1 are given further site-specific context in the following sections. A description of the baseline physical environment of the Proposed Development can be found in Chapter 7, Marine Geology, Oceanography & Physical Processes, Chapter 10, Benthic Subtidal & Intertidal Ecology and Chapter 20, Land Use & Ground Conditions.

3.3.4 Offshore Array

3.3.4.4 The array area covers approximately 253km² within the Irish Sea. Is it wholly located within the 12nm limit of the Isle of Man Territorial Sea and is approximately 6nm due east of the Isle of Man with Maughold Head as its closest point at approximately 11km. Water depths across the Offshore Array range from around 10m to 37m below LAT, with the deepest water located in the far north-east corner of the site, where the seabed slopes steeply. The seabed gradients over the rest of the site are generally shallow.

3.3.4.5 The seabed sediments over the site are generally coarse comprising sands and gravels, with a higher fraction of finer sediments in the north, grading to coarser sediments to the south. Boulders are found in limited deposits across the site. No rock outcrop was recorded. The most noticeable feature of the seabed is the prevalence and distribution of gravel ribbons exposed by high current velocities flowing in a south-west to north-easterly direction.

3.3.5 Offshore Electrical Connection Cable

3.3.5.4 The Offshore Electrical Connection Cable(s) travels approximately south-west from the Offshore Array to the landfall in the Isle of Man's east coast with landfall either in Douglas Bay or Groudle Bay. Geophysical surveys planned for 2024 will collect data on seabed conditions, bathymetry and obstacles to further inform the Route Planning process between the Offshore Array and the landfall location in either Douglas Bay or Groudle Bay.

3.3.6 Terrestrial Electrical Connection Cable

3.3.6.4 The Terrestrial Electrical Connection Cable will only form part of the Proposed Development if landfall is made in Douglas. If landfall is made in Groudle Beach, the

cable will be subject to a separate consent (most likely an additional TCPA). From landfall, the Offshore Electrical Connection Cable will connect to the Terrestrial Electrical Connection Cable at a Transition Joint Bay (TJB) (as shown in Figure 3.2 and further described in section 3.6.2), at which point the Terrestrial Electrical Connection Cable will be routed to the OnSS in Douglas.

3.3.7 Onshore Substation (OnSS)

3.3.7.4 The OnSS could be located next to an existing Isle of Man Substation at Lord Street or Middle River in Douglas and would house all necessary electrical infrastructure to align the voltage and meet the requirements of protecting the connection and isolating the transmission network, including Grid Connection Cable(s) to the Isle of Man Substation.

3.3.8 Route to Market (RtM) Transmission Assets

3.3.8.4 The RtM Transmission Assets include cables that will transport electricity from within the Offshore Array to other jurisdictions (England, Wales and/or Eire). The routing of these transmission assets is subject to the ongoing RtM evaluation and Route Planning process, further described in Chapter 4, Site Selection & Consideration of Alternatives. For the purposes of defining the extent of these assets that are part of the Proposed Development and/or are part of the infrastructure in which a Scoping Opinion is being sought, they are described as the following:

- RtM Transmission Assets within Offshore Array: situated between the Offshore Substation and the eastern edge of the Offshore Array, defined as part of the Proposed Development to which a Scoping Opinion is being sought; and
- RtM Transmission Assets within the Transmission Asset Funnel: situated outside of the Offshore Array, outside of Isle of Man Territorial Seas, therefore not part of the Proposed Development, though part of the infrastructure in which a Scoping Opinion is being sought due to their potential to give rise to cumulative and transboundary effects on receptors within the Offshore Array. The RtM Transmission Asset Funnel is defined as an area equal to the length of a tidal excursion on the outside edge of the Offshore Array, which is the upper limit of sediment transport and deposition and limit of Likely Significant Effects to arise.

3.3.8.5 The RtM Transmission Assets outside of the Offshore Array and the Transmission Asset Funnel are not part of the Proposed Development or subject to a Scoping Opinion. They are only defined to provide an understanding of the 'Whole Project'. The associated RtM options being considered are described in section 3.3.10.

3.3.9 Operation & Maintenance (O&M) Facilities

3.3.9.4 The O&M facilities used to support the Proposed Development will form part of the Moir Vannin Offshore Wind Farm (the 'Whole Project') and onshore facilities will be subject to a separate Isle of Man consent application. Whilst the physical O&M facilities are therefore not part of the Proposed Development or part of the infrastructure in which a Scoping Opinion is being sought, the activities associated with the operations, maintenance and decommissioning phase of the Proposed Development are and will therefore be assessed in the EIA. An overview of these activities is provided separately in section 3.8, to distinguish the infrastructure from the activities where a Scoping Opinion is being sought.

3.3.9.5 An overview of the O&M facilities and their Maximum Design Scenarios is provided in Table 3.2 to meet the need to define the Whole Project.

Table 3.2: Maximum Design Scenario: Operations & Maintenance.

Component	Parameters	Design Envelope
O&M Base	Number of main buildings:	2 (offices and warehouse)
	Total area (land plot):	12,000 m ²
	Footprint:	4,500 m ²
	Height of offices:	12 m
	Height of warehouse:	10 m
Quayside	Footprint	100 m x 16 m.
Crew Transfer Vessel (CTV)	Maximum depth LAT:	5 m
	Length overall (LOA):	35 m
	Breadth overall (BOA):	10 m
Service Operation Vessel (SOV)	Maximum depth LAT:	8.5 m
	LOA:	120 m
	BOA:	25 m

3.3.10 Route to Market (RtM) Options

- 3.3.10.4 This section provides a description of the assets associated with the RtM options being considered, to meet the need to define the 'Whole Project' (the Mooir Vannin Offshore Wind Farm) as per EIA regulations. This approach is set out further in Chapter 5, EIA Methodology.
- 3.3.10.5 The Proposed Development will be developed with either one or a combination of the potential RtM options (to create the 'Whole Project'). Currently all RtM options are subject to high-level Route Planning and Site Selection (RPSS) process (outlined in Chapter 4, Site Selection & Consideration of Alternatives), technical feasibility assessment and commercial viability analysis. This evaluation will continue throughout the remainder of 2023, with a final decision being made in Q1 2024. Following this decision, the consents for the required assets will be sought separately to the Proposed Development from the relevant jurisdictions.
- 3.3.10.6 A description of each RtM option (broadly categorized into Manx 1 and Manx 2) is provided below with a high-level illustration of the Mooir Vannin Offshore Wind Farm (i.e. the 'Whole Project') including the RtM options, consents and jurisdictions shown in Figure 3.3 and Figure 3.4. Details relating to each option are subject to change as the evaluation of these options progresses and their designs are refined in accordance with the Design Envelope Approach (described further in section 1.3 and Annex 5.A, Proportionate EIA Position Paper).
- 3.3.10.7 The technical specifications and Maximum Design Scenarios for RtM options are sufficiently detailed to allow the reader to understand the scale and complexity of the Whole Project to inform the requested scoping opinion. Further technical detail will be provided in the relevant future consents for those parts outside of the Isle of Man Territorial Seas.

3.3.11 Route to Market: 'Manx 1' – Radial Connection with P2X

- 3.3.11.4 A radial connection with either HVAC/HVDC transmission system from the Proposed Development to an OnSS in either Penwortham (England) or Frodsham (England) with a National Grid connection and a P2X facility that is either connected via Private Wire or via the National Grid as illustrated in Figure 3.3.

- 3.3.11.5 Power-to-X (also known as P2X) is a collective term for conversion technologies that use renewable electricity, for example wind power, to create something else ('X'). The 'X' created is an energy carrier – usually a carbon-neutral synthetic fuel, such as hydrogen, synthetic natural gas, liquid fuels, or chemical, though usually renewable hydrogen – which can power medium- to heavy-duty transport or be used in industry.
- 3.3.11.6 The offshore transmission system will comprise up to five export cables in the event of HVAC and will travel via an offshore booster station or up to four export cables (in two circuits) in the event of HVDC. For the HVAC Private Wire connection to P2X option, the offshore cables will split prior to or at landfall, with some travelling directly to the P2X facility and the others to the OnSS in North West England or Wales which then connect to a National Grid substation. For the National Grid connection to P2X option, the offshore export cables will all travel directly to the OnSS in England which then connect to a National Grid substation, from which power will supply the P2X facility.

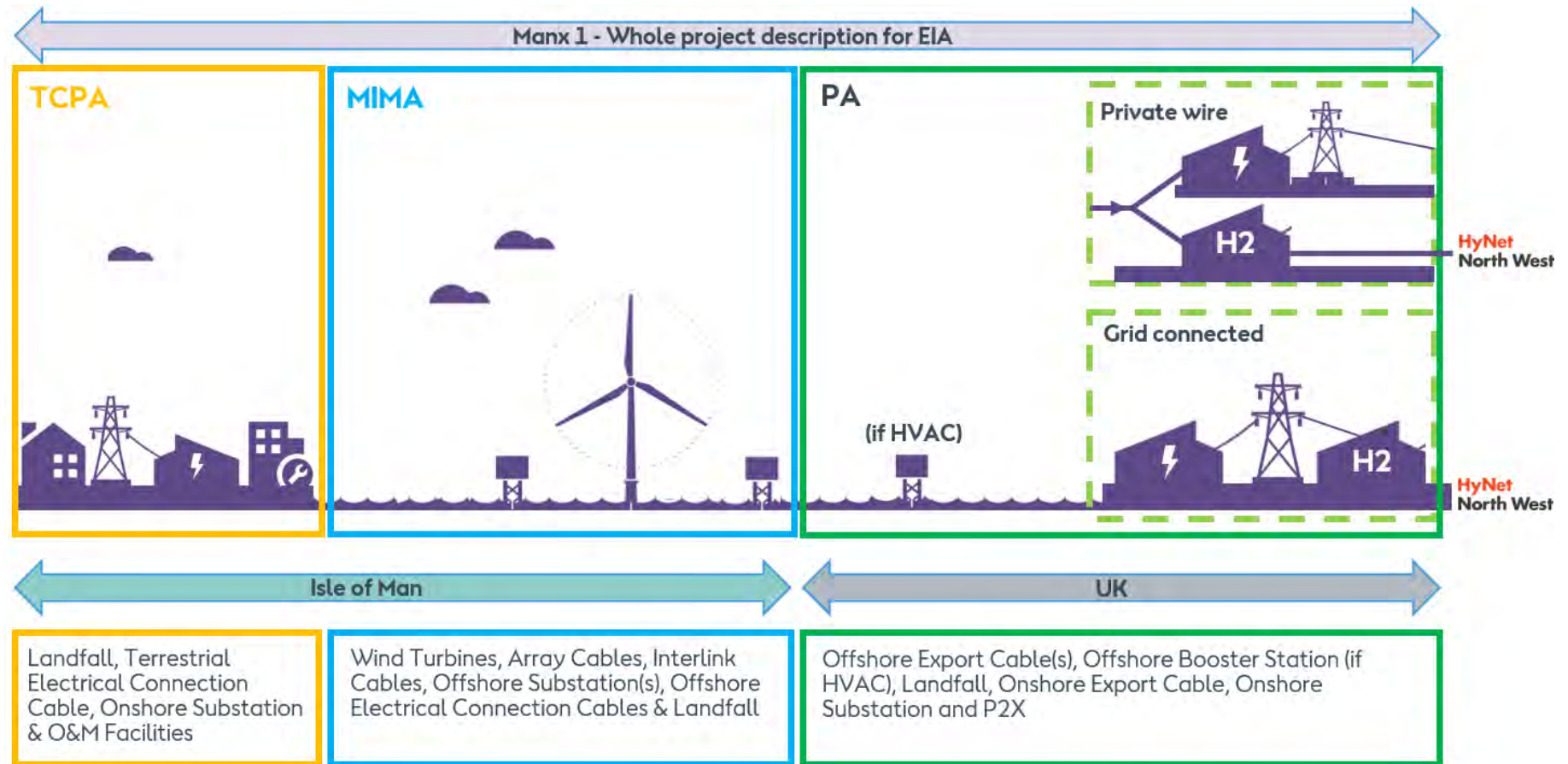


Figure 3.3: Moir Vannin Offshore Wind Farm with Manx 1 Route to Market option, required Consents and relevant jurisdictions. NOTE: PA is Planning Act 2008 (England & Wales), MIMA is Marine Infrastructure Management Act 2016 (Isle of Man) and TCPA is Town and Country Planning Act 1999 (Isle of Man).

3.3.12 Route to Market: 'Manx 2' – Multi-Purpose Interconnector with P2X

- 3.3.12.4 A Multi-Purpose Interconnector (MPI) with a HVDC transmission system with export cables connecting the Proposed Development to both an Onshore Converter Station in Eire (currently investigating potential grid connection locations on the east coast and export cables to an OnSS in the North West of England or in Wales, which could connect to a P2X facility via private wire before the National Grid substation, as illustrated in Figure 3.4.
- 3.3.12.5 A total of three converter stations would be required to convert the voltage firstly from HVAC within Isle of Man Territorial Seas (using one of the five proposed Offshore Substations in the Offshore Array), then back to HVAC once onshore in Eire and in the UK (using the aforementioned OnSSs).
- 3.3.12.6 The consideration of this option is to support UK and Eire Government policy terms and balance of the grid between the UK and Eire
- 3.3.12.7 The RPSS process that will support the evaluation of the RtM options is described in Chapter 4, Site Selection & Consideration of Alternatives.

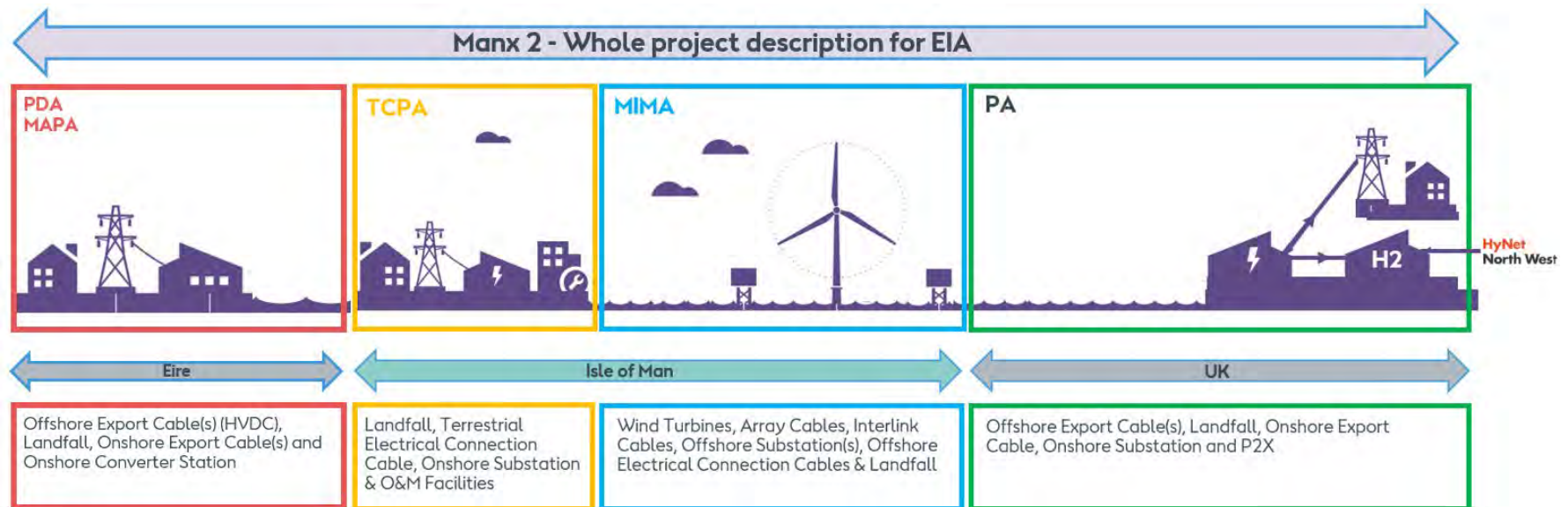


Figure 3.4: Moir Vannin Offshore Wind Farm with Manx 2 Route to Market option, required Consents and relevant jurisdictions. NOTE: PA is Planning Act 2008 (England & Wales), MIMA is Marine Infrastructure Management Act 2016 (Isle of Man), TCPA is Town and Country Planning Act 1999 (Isle of Man), PDA is Planning and Development Act 2000 (Eire) and MAPA is Maritime Area Planning Act 2021 (Eire).

3.3.12.8 An overview of the MDS for the RtM options is outlined in Table 3.3. Due to the ongoing evaluation of these options, the presented values provide the MDS of this evaluation. It should be noted that the Manx 2 Design Envelope values apply to both UK and Eire (e.g., 100 m permanent construction corridor defines a 100 m permanent construction corridor in both the UK and Eire, whereas a total of 8 export cables represents an even split of four export cables to the UK and four to Eire).

Table 3.3: RtM Options Maximum Design Scenario.

Component	Parameters	Manx 1 Design Envelope	Manx 2 Design Envelope
Offshore export cables	Total number	5 (in 5 circuits)	8 (in 4 circuits)
	Permanent offshore construction corridor width	1,200 m	1,100 m
	Temporary offshore construction corridor width	1,400 m	1300 m
HVAC Offshore Booster Stations	Number	1	NA (HVDC)
Landfall	Permanent landfall construction corridor	100 m	100 m
	Temporary landfall construction corridor	200 m	200 m
Onshore export cables	Total number	15 (in 5 circuits)	8 (in 4 circuits)
	Permanent construction corridor	65 m	17 m
	Temporary construction corridor	85 m	27 m
OnSS / converter station	Temporary footprint	166,000 m ²	166,000 m ²
	Permanent footprint	63, 000 m ²	63, 000 m ²
	Height	30 m	30 m

3.4 Design Envelope Approach

3.4.1.4 The consenting process for the 'Whole Project' (including the Proposed Development) will be progressed using the design envelope approach. The design envelope sets out the maximum extents of a project for which significant effects are established within the project's EIA and will inform the basis on which consent is sought for the project. The detailed design of the Proposed Development can then vary within this 'envelope' whilst maintaining the validity of the EIA. This approach allows the consideration and analysis of the maximum impacts that could occur from a range of designs and parameters whilst enabling meaningful assessment and building in reasonable flexibility for future design decisions to be made on the Proposed Development.

3.4.1.5 At this stage in the development process, the Project Description is therefore indicative and based on the Applicant's extensive experience in building and operating 12 offshore wind farms and having two additional assets (Hornsea Three and Hornsea Four) in various stages of development within the UK.

3.4.1.6 The 'envelope' has been designed to include a necessary degree of flexibility to accommodate further project refinement during detailed design, post consent. The Proposed Development requires flexibility to be incorporated into its design so that design decisions can be made post-consent, such as choice of foundations options, transmission technology (i.e. HVAC or HVDC), specific siting of infrastructure and

construction methodologies to ensure that anticipated changes in available technology and project economics can be accommodated within the consent obtained for the Proposed Development. The final design will depend on factors including ground conditions, wave and tidal conditions, seabed obstructions, project economics and procurement approach. This Chapter therefore sets out the maximum design parameters for the Proposed Development, which are encompassed within the Design Envelope.

3.5 The Proposed Development: Offshore Infrastructure

3.5.1.4 This section provides the design envelope for all the offshore components of the Proposed Development described in Table 3.1.

3.5.1.5 Prior to the installation of offshore infrastructure, seabed preparation may be required to level the seabed, remove obstacles, reinforce the ground, reduce scour or generally facilitate offshore installation. These activities will likely take place separately, such as boulder and debris clearance (including potential seabed excavation), pre-sweeping, Pre-Lay Grapple Run (PLGR) or Unexploded Ordnance (UXO) clearance. The scope for each will be defined following further site investigations of the site.

3.5.1.6 All infrastructure will be fabricated offsite, transported to and stored at a suitable port facility and then transported to site when required with specialist transport and installation vessels.

3.5.2 Offshore Pre-Construction Activities

3.5.2.4 Pre-construction activities include pre-construction surveys and seabed preparation activities that are required prior to installation of infrastructure, the scopes of which are outlined in Table 3.4 below.

Table 3.4: Maximum Design Scenario: Pre-Construction Activities.

Parameters	Design Envelope
Geophysical survey types	Multi-Beam Echo Sounder (MBES), Side Scan Sonar (SSS), Magnetometer (Mag), Sub-bottom Profiler (SBP)
Geophysical survey scope	Full coverage of the construction corridors
Geotechnical survey investigations	Boreholes, Cone Penetration Tests
Geotechnical investigation scope	Samples required for each foundation (WTGs & OSS) with contingency locations
Seabed preparation activities	Boulder clearance, pre-sweeping (sandwave clearance)

3.5.3 Wind Turbine Generators (WTG)

3.5.3.4 The maximum design scenario for the WTGs is outlined in Table 3.5 and illustrated in Figure 3.5.

Table 3.5: Maximum Design Scenario: WTG.

Parameters	Design Envelope
Maximum number of Wind Turbine Generators	100
Maximum rotor diameter	320 m
Maximum blade tip height	389 m above Lowest Astronomical Tide
Minimum blade tip height	30 m above Lowest Astronomical Tide

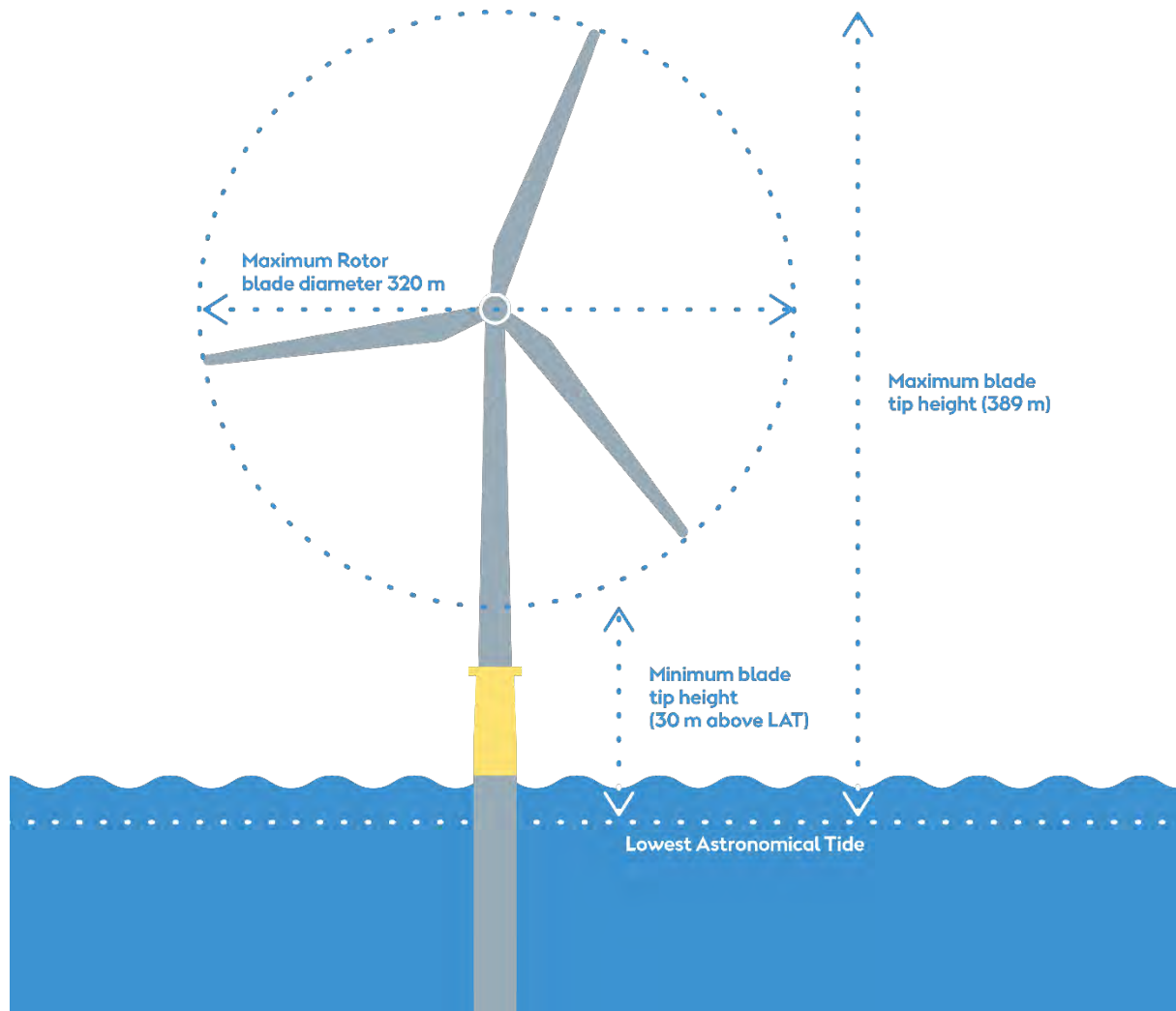







Figure 3.5: Maximum Design Parameters of a typical Wind Turbine Generator.

3.5.4 Foundations

- 3.5.4.4 The maximum design scenario for the WTG foundations and Offshore Substation foundations is provided in Table 3.6.
- 3.5.4.5 The foundation type and design for WTGs and Offshore Substations will depend on the ground conditions and procurement of the foundation supply and installation contractor(s) which will likely take place post-consent. As such, a range of foundation types will be considered in the EIA.

Table 3.6: Maximum Design Parameters for each WTG Foundation and OSS Foundation.

Foundation Type (example design icons)	Description	Maximum Parameters	WTG	OSS
 Piled Jacket	Lattice structure foundation, piled into the seabed.	Leg diameter: Pin pile diameter: Number of legs: Number of piles: Hammer energy: Seabed footprint:	6.6 m 6 m 4 4 3000 kJ 113 m ²	4.6 m 3.5 m 8 16 3000 kJ 154 m ²
 Suction Caisson/ Bucket Jacket	Lattice structure foundation, fixed to seabed by pressure differences between inside the bucket and the surrounding water (no piling required).	Bucket diameter: Number of legs: Seabed footprint:	20 m 4 1,257 m ²	30 m 8 5,655 m ²
 Gravity Base	Single structure foundation, fixed to seabed by its own weight (no piling required).	Diameter at surface: Dimensions at seabed: Seabed footprint:	12 m 60 m diameter 2,827 m ²	170 x 170 m 170 x 170 m 28,900 m ²
 Monopile	Single structure foundation, piled into the seabed.	Diameter at surface: Diameter at seabed: Hammer energy: Seabed footprint:	12 m 18 m 5000 kJ 255 m ²	12 m 18 m 5000 kJ 255 m ²
 Mono Suction Bucket	Single structure foundation, fixed to seabed by pressure differences between inside the bucket and the surrounding water (no piling required).	Diameter of column: Diameter at seabed: Seabed footprint:	12m 40 m 1,257 m ²	12m 40 m 1,257 m ²

3.5.4.6 The maximum design scenarios for foundations of WTGs and OSSs resulting in the largest seabed footprint is described below and illustrated in Figure 3.6 showing (A):

WTG foundation without scour, (B): WTG foundations with scour and (C): OSS (a gravity base foundation results in the largest footprint with and without scour).

- 3.5.4.7 For each WTG foundation without scour protection, the gravity base foundation has a 60m diameter resulting in the largest seabed footprint at 2,827m². For each WTG foundation with scour protection, the suction caisson/bucket jacket foundation has the largest seabed footprint of 11,025m², assuming a single scour pad with dimensions 105 m x 105 m. For each OSS foundation, the gravity base foundation results in the largest footprint in both cases: with a footprint of 170 x 170 m (28,900 m²) without scour and a footprint of 72,900 m² with scour, assuming a single scour pad 270 x 270 m in size.
- 3.5.4.8 In all cases, a temporary works area with a 500 m diameter for construction vessels would be required around each foundation. The scour protection technology, design and timings of when it would be installed (prior to or after foundation installation) for both WTGs and OSSs will be defined at a later stage when the project design is further refined, likely post-consent.

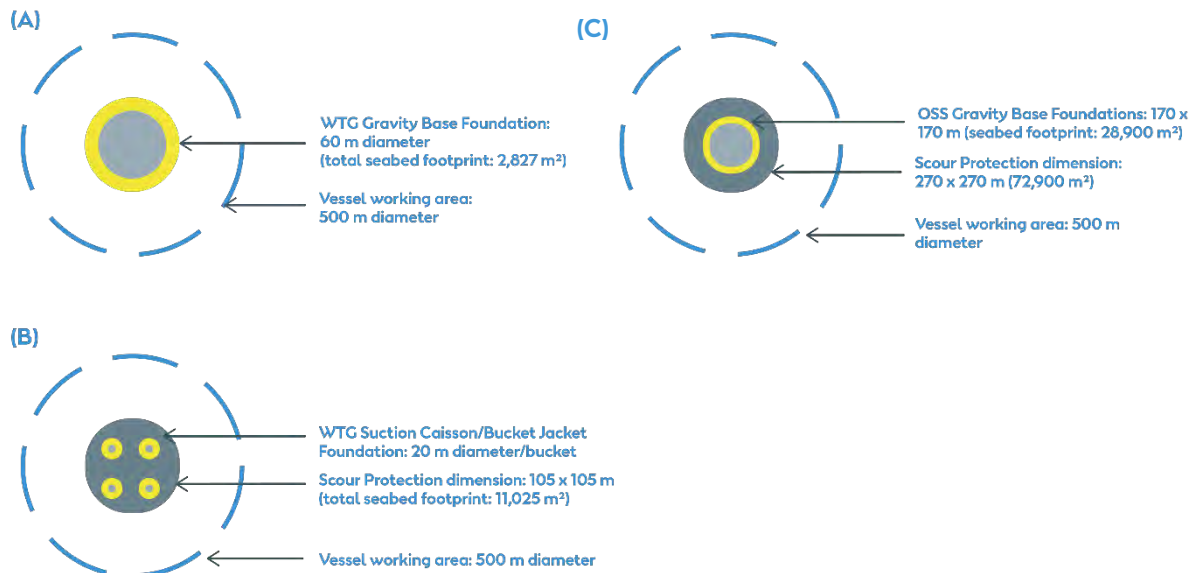


Figure 3.6: Maximum Design Scenario resulting in the largest seabed footprint for WTG foundations (A), WTG foundations with scour (B) and OSS with and without scour (C).

3.5.5 Offshore Substations and Offshore Cables

- 3.5.5.4 The maximum design scenario for the Offshore Substation(s), the Offshore Electrical Connection Cables, the Array Cables, the Interlink Cables and RtM Transmission Assets (within the Offshore Array) is outlined in Table 3.7 and illustrated in Figure 3.7.
- 3.5.5.5 One of the Offshore Substations could function as an Operation & Maintenance (O&M) base during construction and O&M.
- 3.5.5.6 All offshore cables will be buried up to 3 m, with a Cable Burial Risk Assessment carried out post-detailed site surveys (scheduled for 2024) to refine the required burial requirements (e.g., depth of burial) along all offshore cable routes.
- 3.5.5.7 Following construction of the Proposed Development, any requirements that apply to owners and operators of electrical infrastructure generators from the Electricity

Act 1996 will be adhered to where relevant and overseen by the regulator of the Isle of Man electricity market.

Table 3.7: Maximum Design Scenario: Offshore Substations and Offshore Cables.

Component	Parameters	Design Envelope
Array Cables	Transmission technology	HVAC
	Number of Array Cables	1 per wind turbine plus potential redundant links
	Length of cable	490km
	Installation methodology	Cable will be transported to site on a Cable Lay Vessel or similar and installed into a pre-cut trench, installed via post-lay burial or simultaneous lay and burial (or similar) either by or a combination of trenching, dredging, jetting, MFE, ploughing and/or vertical injection.
	Cable protection	15% of length
Offshore substation	Number of Offshore Substations	5 (with one potentially as an O&M base or for other purposes).
	Length of topside	180 m
	Width of topside	90 m
	Height (LAT) (including auxiliary structures, such as helipad, crane, lightning protection however excluding antennae and masts)	100 m
	Installation methodology	Transport barge with crane vessel to lift in place; alternatives such as skidding also under consideration.
Interlink cables	Number of cables	5 (1 per offshore substation)
	Length of cables	100 km (20 km per cable)
	Installation methodology	Cable will be transported to site on a Cable Lay Vessel or similar and installed into a pre-cut trench, installed via post-lay burial or simultaneous lay and burial (or similar) either by or a combination of trenching, dredging, jetting, MFE, ploughing and/or vertical injection.
	Cable protection	15% of length
Route to Market Transmission Assets	Transmission technology	HVDC / HVAC
	Number of cables	5 (one per circuit)
	Length	125 km (25 km per circuit)
	Installation methodology	Cable will be transported to site on a Cable Lay Vessel or similar and installed into a pre-cut trench, installed via post-lay burial or simultaneous lay and burial (or similar) either by or a combination of trenching, dredging, jetting, MFE, ploughing and/or vertical injection.

Component	Parameters	Design Envelope
	Cable protection	15% of length
	Booster Stations	One of transmission system is HVAC.
Offshore Electrical Connection Cable	Transmission technology	HVAC
	Number of cables	3 (one per circuit)
	Length of cables	90 km (30 km per circuit)
	Cable corridor widths	Survey: 1,000 m Temporary Works Corridor: 900 m Permanent Works Corridor: 700 m
	Installation methodology	Cable will be transported to site on a Cable Lay Vessel or similar and installed into a pre-cut trench, installed via post-lay burial or simultaneous lay and burial (or similar) either by or a combination of trenching, dredging, jetting, MFE, ploughing and/or vertical injection.
	Cable protection	15% of length

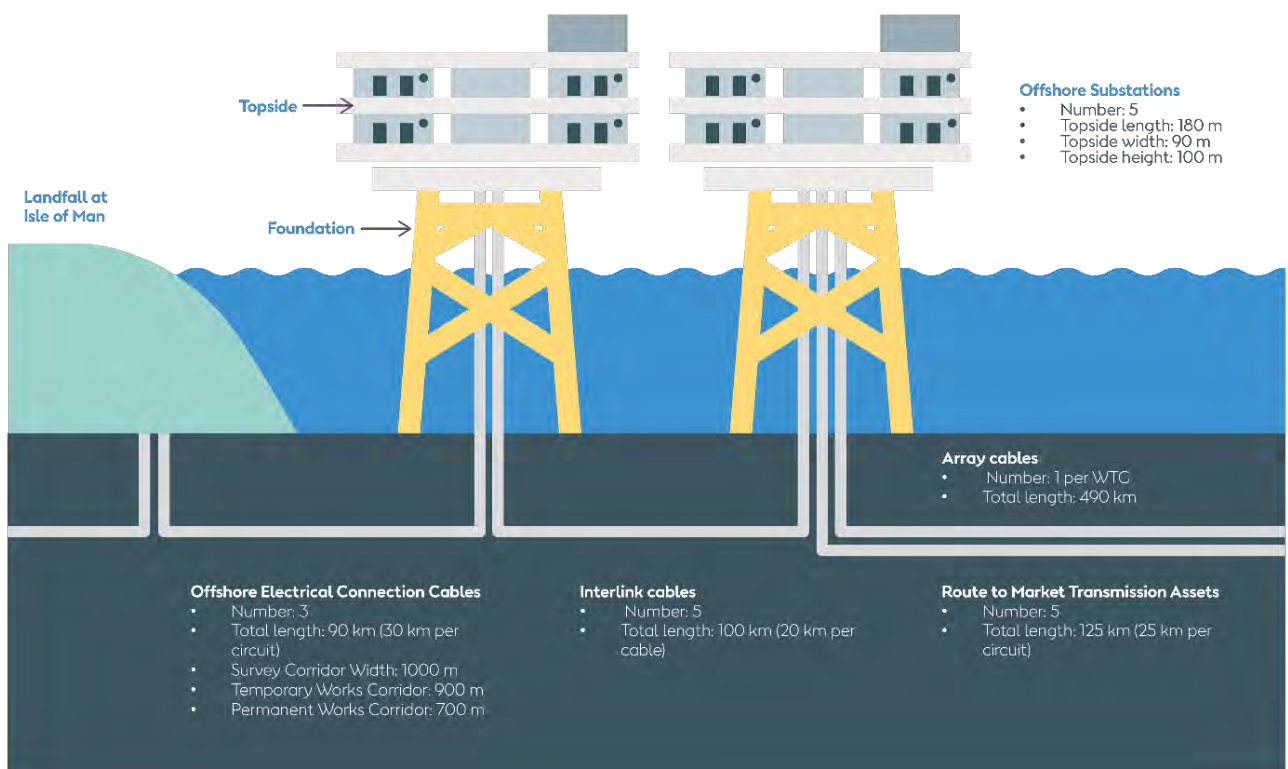


Figure 3.7: Maximum Design Parameters for Offshore Substations and Offshore Cables.

3.6 The Proposed Development: Onshore Infrastructure

3.6.1.4 This section provides the design envelope for all the onshore components of the Proposed Development described in Table 3.1.

3.6.2 Terrestrial Electrical Connection Cable

3.6.2.4 In the event that the Proposed Development makes landfall at Douglas, the Electrical Connection Cable will be routed between the landfall and the OnSS. The indicative onshore cable arrangement is illustrated in a typical trench cross-section in Figure 3.8. Cable installation is a well-established technique and will incorporate environmental management and mitigation measures as standard practice. Precise installation methods will differ according to the nature of the environment through which the cable is being installed. It has been designed to create the least environmentally damaging and most cost-effective approach to cable construction.

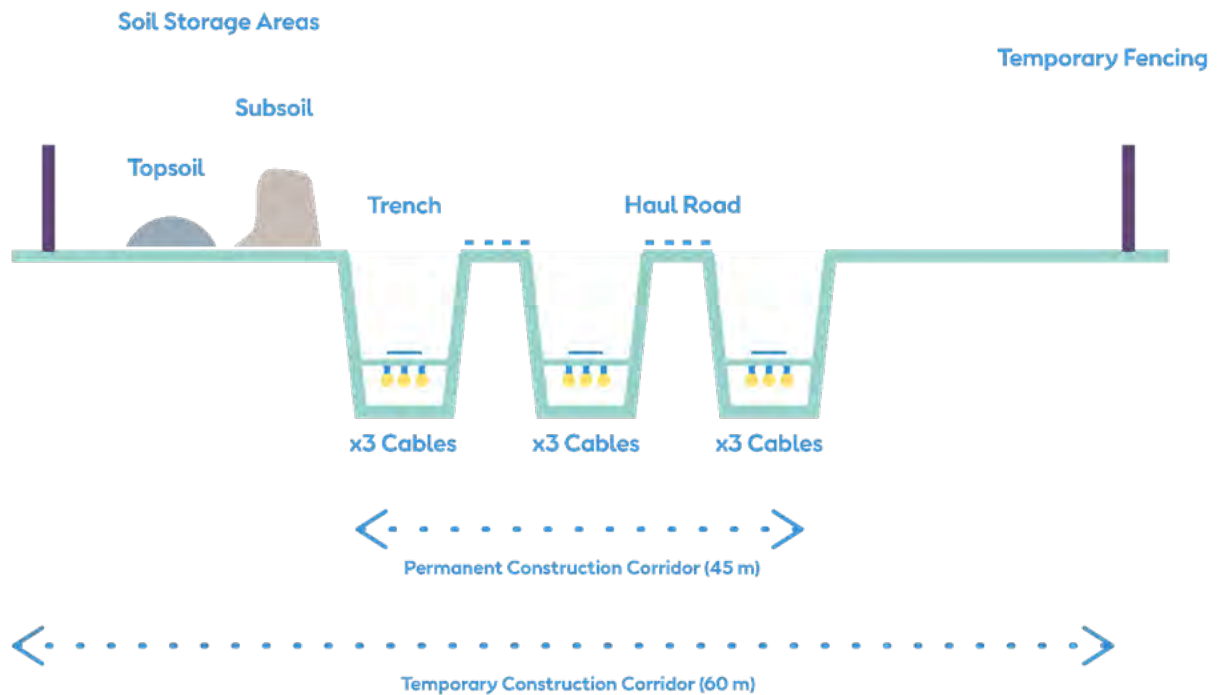


Figure 3.8: Typical Cross-Section of Onshore Cable Route Corridor (not to scale).

3.6.2.5 Transition jointing bays (TJB) and Jointing Bays (JB) are underground concrete structures that house the joint between the offshore and onshore export cables (TJB) and the joint between sections of the onshore export cables (JB). The exact location and number of these jointing bays will be determined and refined throughout the pre-application process of scheme development with confirmed details to be included in the final application.

3.6.2.6 All cables will be installed by one or a combination of open-cut trenches and trenchless techniques such as horizontal directional drills (HDD). HDD is a trenchless method where cable is pulled directly through pre-drilled underground sections and is typically used for crossing features that cannot be trenched i.e. railway lines.

3.6.3 Onshore Substation

3.6.3.4 The Proposed Development’s HVAC transmission system operates at a different voltage level to the Isle of Man’s transmission network. As such, an OnSS housing a power transformer and other associated electrical infrastructure will be required to decrease (step down) the voltage for the Isle of Man network. The equipment will either be housed within a building(s), in an open compound or a combination of the two.

3.6.3.5 The MDS of the landfall, Terrestrial Electrical Connection Cable and OnSS is illustrated in Figure 3.9 and shown in Table 3.8.

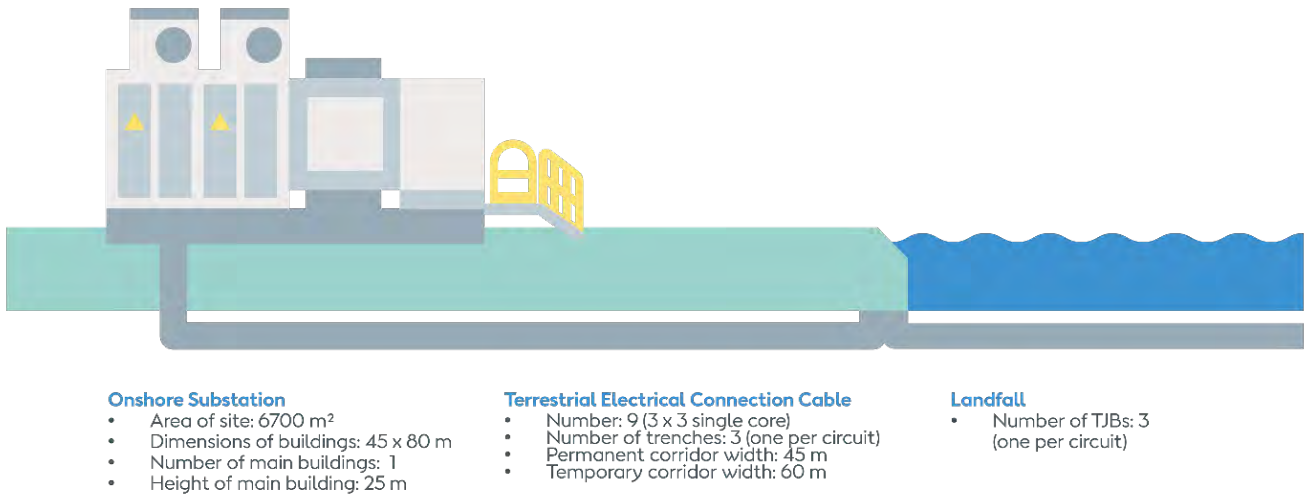


Figure 3.9: Maximum Design Parameters for landfall, Terrestrial Electrical Connection Cable and the Onshore Substation.

Table 3.8: Maximum Design Scenario: Onshore Infrastructure.

Onshore infrastructure	Component	Maximum Design Scenario
Landfall	Installation methodology	Direct burial / trenchless
	Number of Transition Joint Bays (TJB)	3 (one per circuit)
	TJB dimensions (L x W X H)	10 x 25 x 6 m
	Permanent construction corridor width	210 m
	Temporary construction corridor	450 m
	Permanent construction area	16,800 m ²
	Temporary construction area	90,000 m ²
Terrestrial Electrical Connection Cable	Number of cables	9 (3 x 3 single core cables) (3 per HVAC circuit)
	Number of trenches	3 (one per circuit)
	Installation	Direct-lay in trenches, or pulled through pre-installed ducting
	Permanent construction corridor width	45 m
	Temporary construction corridor width	60 m
Onshore substation	Area of site	6700 m ²
	Dimensions of buildings	45 x 80 m
	Number of main buildings	1

Onshore infrastructure	Component	Maximum Design Scenario
	Height of main building	25 m
	Number of grid connection cables	2

3.7 Construction Programme

3.7.1.4 The indicative high-level construction programme for the Proposed Development is presented in Figure 3.10. The programme illustrates the likely duration of the installation of major elements, and how they may relate to one another in an example of a construction programme. Activities may not be continuous, and the sequence of activities may change. The detailed construction programme will be developed as design and procurement activities progress.

3.7.1.5 The indicative start of construction commences with the OnSS in Q2 2030.

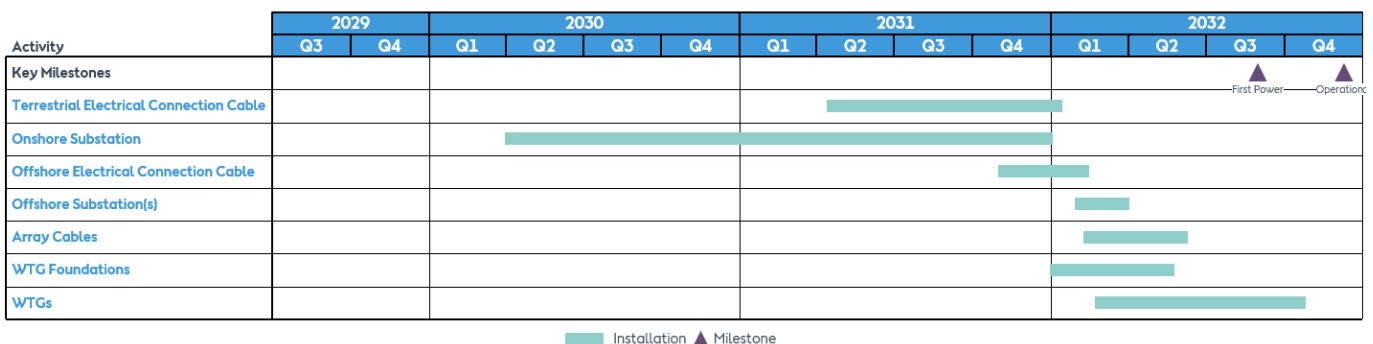


Figure 3.10: Indicative Construction Programme.

3.8 Operations, Maintenance and Decommissioning

3.8.1.4 The Operations and Maintenance (O&M) phase will commence once the Proposed Development has completed construction and is fully commissioned. As previously stated, a Scoping Opinion is being sought for the activities associated with operations, maintenance and decommissioning, not for the physical facilities, which are subject to a separate Isle of Man consent under the relevant planning legislation and regulations (if an existing facility is not utilised). The MDS for these onshore facilities are provided in section 3.3.9. The O&M strategy will therefore require an O&M base either onshore or offshore and will primarily relate to CTVs, potential Service Operation Vessels, offshore accommodation, supply vessels and helicopters for the O&M services that will be performed at the windfarm and can only be finalised once further Proposed Development specifications (project layout, WTG type and electrical transmission design) are known.

3.8.1.5 Maintenance activities will be categorised into preventive and corrective maintenance. Preventive maintenance will be undertaken in accordance with a planned and routine schedule and will include activities such as inspections, whereas corrective maintenance is typically reactive and carried out as a repair, replacement or retrofit campaign. Unmanned, remotely operated or autonomous vessels may also be used for inspections. The final operational and maintenance strategy adopted may be a combination of the above solutions.

3.8.1.6 The operational lifetime of the Proposed Development is expected to be up to 35 years, with a possible extension to repower the site. At the end of the operational lifetime, it is anticipated that all structures above the seabed or ground level will be

completely removed as part of the decommissioning sequence over approximately three years and will generally be the reverse of the construction sequence, involving similar types and numbers of vessels and equipment. The decommissioning plan and programme will be developed prior to construction and be updated during the project's lifespan to take account of changing best-practice and new technologies, in consultation with the Isle of Man Government. The base case assumption is that foundations below a certain seabed depth, all electrical cables, scour and cable protection will be left in-situ to minimise environmental impacts associated with their removal.

3.9 Commitments

- 3.9.1.4 In accordance with adopting a proportionate approach to the EIA process (see Chapter 5, EIA Methodology), the Applicant has identified the potential impacts associated with the Proposed Development (see Annex 5.B Impacts Register) and considered mitigation measures (referred to herein as Commitments) that may be adopted to reduce or eliminate those where LSE is concluded (see section 5.5.5 of Chapter 5, EIA Methodology).
- 3.9.1.5 The commitments made pre-scoping are presented in Annex 3.A, Commitments Register. The primary commitments to reduce or eliminate LSE at this scoping stage are presented in Table 3.9.

Table 3.9: Primary commitments to reduce or eliminate LSE at Scoping Stage.

Commitment ID	Stage	Commitment type	Commitment	Rationale
Co21	Scoping	Primary	The onshore electrical cables will be buried underground for their entire length.	To minimise the effects of land loss, and impacts to soils and geology.
Co45	Scoping	Primary	Minimum blade tip clearance of at least 30 m above LAT.	To minimise the risk of blade allision particularly for sailing vessels with a mast.
Co46	Scoping	Primary	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	To minimise land take while ensuring access at ground level can be maintained.

3.10 Consultation

- 3.10.1.4 The application process is underpinned by extensive informal and formal consultation (see Chapter 6, Consultation), forming an integral part of the Proposed Development's 'Commit, Consult, Design' ethos (see Annex 5.A Proportionate EIA Position Paper).
- 3.10.1.5 Following the Scoping report submission and throughout the EIA process, a summary of the key issues raised during consultation specific to the Project Description will be presented and maintained in either this Chapter or the supporting Consultation Report (see 1.3.2.3 in Chapter 6, Consultation), together with how these issues have been considered in the application process.

3.11 Questions to Consultees

- Question 3.1: Is the definition of the Proposed Development and how it forms part of the Moir Vannin Offshore Wind Farm (the 'Whole project') clear?

4 Site Selection & Consideration of Alternatives

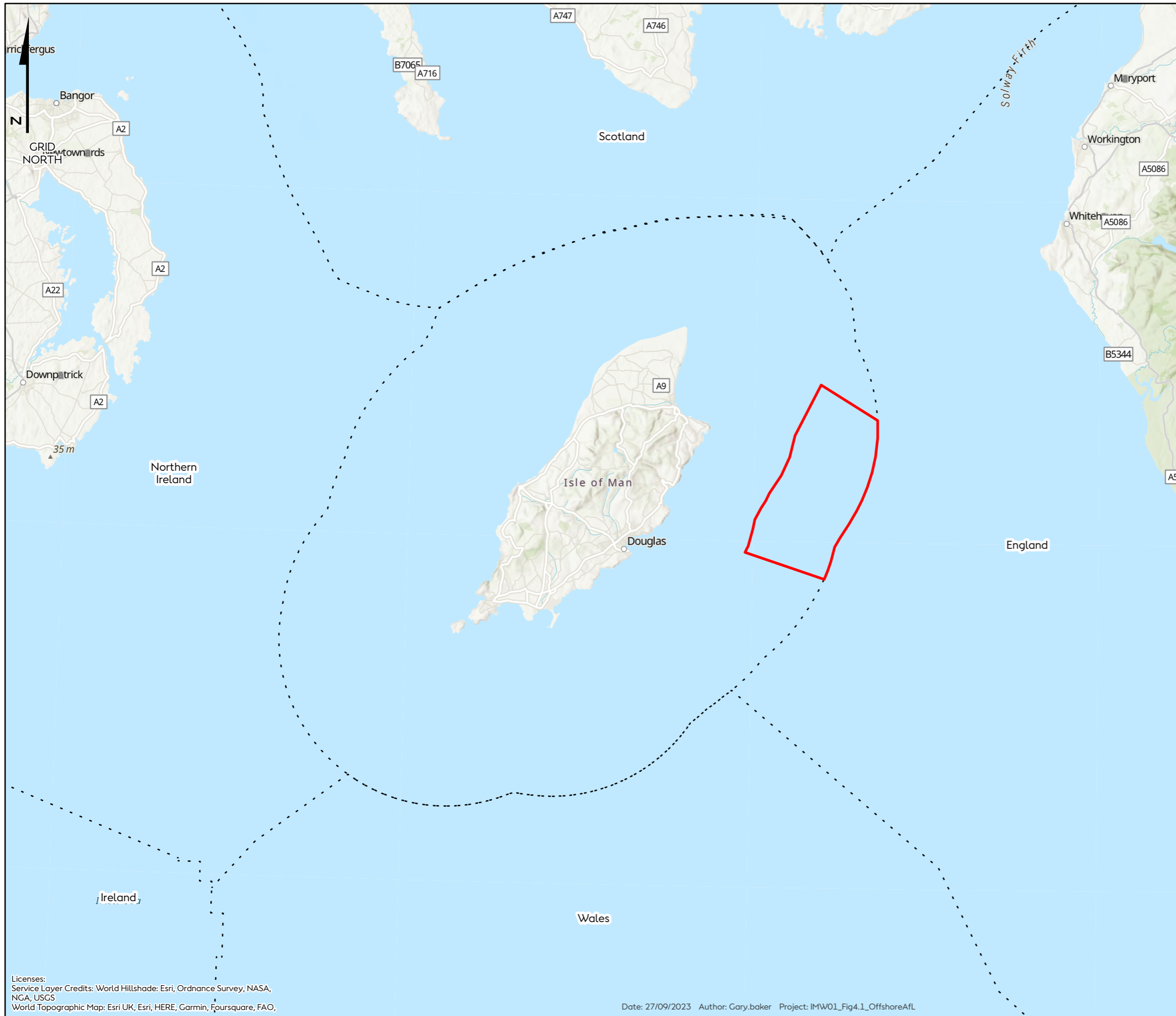
4.1 Introduction

- 4.1.1.1 This Chapter of the Scoping Report outlines the initial site selection and consideration of alternatives work that has been undertaken for the Proposed Development by the Applicant. Additionally, this Chapter presents an overview of the RPSS Process and a summary of those works concluded up to present. This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 4.1.1.2 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities (MU). As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure).
- 4.1.1.3 The submission of this Scoping Report is the precursor to the preparation and submission of the EIA and is intended to inform the scope and methodology of site selection and consideration of alternatives, with feedback from relevant stakeholders.
- 4.1.1.4 Further detail on the future evolution of the RPSS work and how the design of the Proposed Development will be refined based upon stakeholder feedback and the EIA process, will be presented within the ES.

4.1.2 AfL and Grid Connection

- 4.1.2.4 As described in Chapter 1 Introduction, the area for the Proposed Development was identified by the Isle of Man Government in 2014, and the AfL was signed between the Dol and DONG Energy Isle of Man (UK) Limited (now the Applicant) in November 2015. The AfL identified an area for search approximately 253km² to the east of the island (Figure 4.1). As the AfL is identified and granted by the Dol, the Applicant has not considered any alternatives to the AfL area prior to the granting of the preferred bidder status.
- 4.1.2.5 The Proposed Development includes the infrastructure assets within the Offshore Array (wind turbines, Array Cables, Interlink Cables, Offshore Substations, and the Route to Market (RtM) Transmission Assets), the Offshore and Terrestrial Electrical Connection Cables and the Onshore Substation (OnSS). Potential grid connection options at Lord Street or Middle River Substations in Douglas and a proposed potential landfall location at either Douglas or Groudle are part of the Proposed Development and have been suggested as potential options by MU.
- 4.1.2.6 As stated in paragraph 1.1.1.2 and the Scoping Strategy (Annex 5.E), the exact route to consent for the electrical cable connection to the Isle of Man is still to be determined. It could be consented by either the Applicant or MU. The options

presented for grid connection in this Scoping Report have been provided by MU and no other options have been proposed or considered further by the Applicant.



Moor Vannin

Figure 4.1
Offshore Array Afl

- Offshore Array/
Agreement for Lease
(Afl) Area
- - - - Jurisdictional Boundaries



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:500,000

0 5 10 20 Kilometres

0 3 6 12 Nautical Miles

REV	REMARK	DATE
	First issue	27/09/2023

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Date: 27/09/2023 Author: Gary.baker Project: IMW01_Fig4.1_OffshoreAfl

Title: Offshore Array Afl
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Approved by: SB



4.1.3 Transmission options

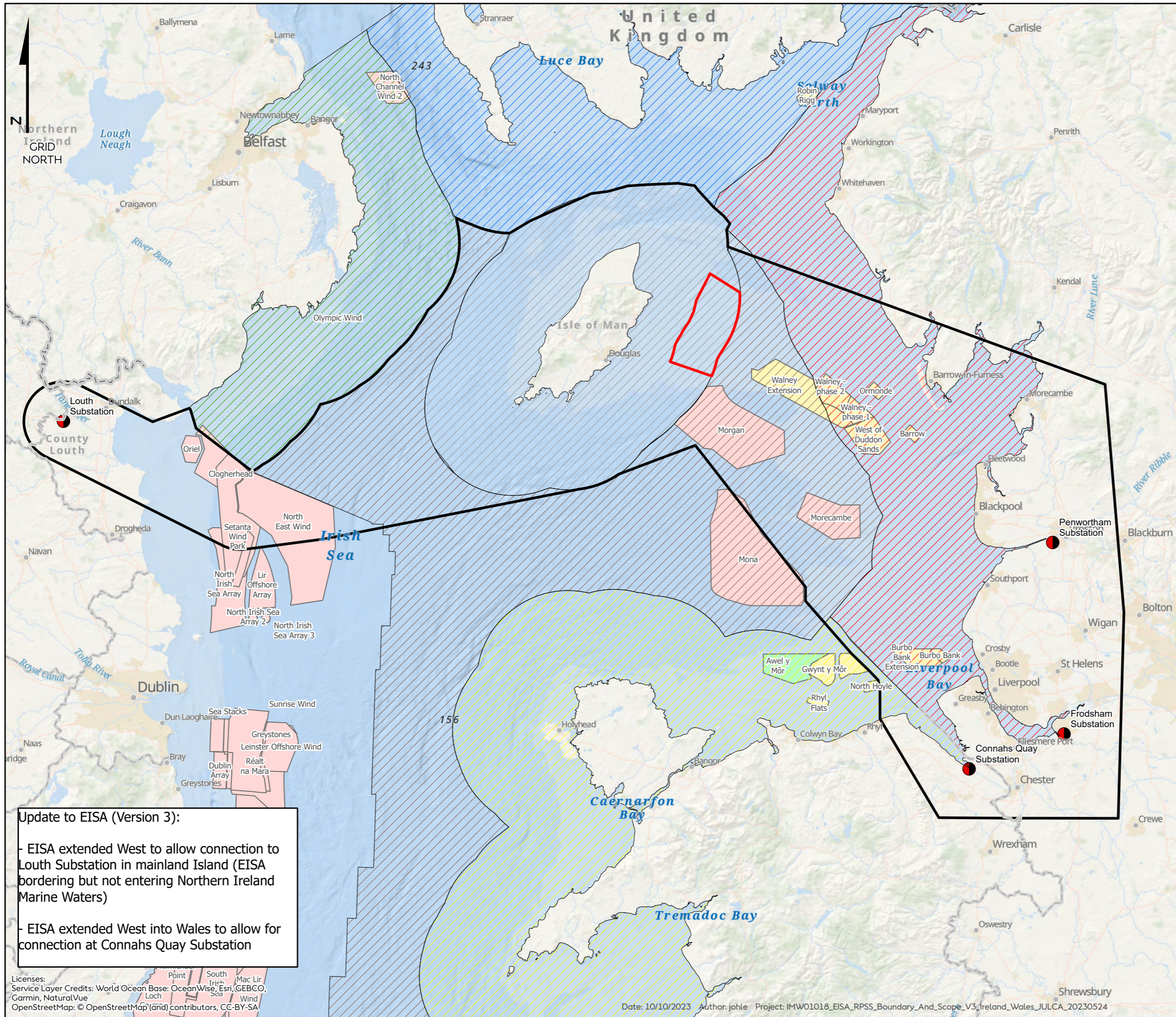
- 4.1.3.4 As with the grid connection, a decision is still to be made on who will ultimately consent, construct, and operate the Offshore and Terrestrial Electrical Connection Cable(s) to a potential Onshore Substation (OnSS) at Douglas (Lord Street and/or Middle River). The presented Offshore and Terrestrial Electrical Connection Cables may therefore be subject to change spatially and may vary in how they are brought forward to consent (temporally). Thus, the Electrical Infrastructure Study Area (EISA) and any associated RPSS work has been based upon the current understanding on grid connection and potential landfall options (see paragraph 4.2.2.4). Therefore, the currently presented landfall locations are indicative of the level of understanding available to the Applicant at this early stage of project development.
- 4.1.3.5 Should the decision be taken that the Applicant will lead on the consenting, construction, and operation of the Offshore and Terrestrial Electrical Connection Cables, then the Applicant will review the landfall and RPSS process to ensure that the final design for the Electrical Connection Cables balances the environmental, technical and commercial constraints and that the process is aligned with the Applicant's internal Cable Capacity Process (CCP). The outcome of this process could result in landfall and cable route refinement, alteration or fundamental reconsideration of alternatives options.
- 4.1.3.6 As the Proposed Development matures and the design is refined, any changes to this will be communicated to all interested parties via Consultation Materials in Q1/Q2 2024 (see Chapter 6, Consultation).
- 4.1.3.7 Presented within this Chapter are:
- Potential cable landfall locations between Douglas and Groudle Beach;
 - Terrestrial Electrical Connection Cable to Lord Street/Middle River OnSS from landfall at Douglas; and
 - Onshore Substation at Lord Street and/or Middle River.
- 4.1.3.8 If a decision is made (subject to discussions and agreement with MU) to make landfall at Groudle Beach, a Terrestrial Electrical Connection Cable would be required to connect the landfall option with the grid connection at Middle River OnSS (Pulrose Power Plant) or Lord Street OnSS. If required, this development scenario would be subject to a separate TCPA Application and is therefore not part of Proposed Development being "scoped" under the Marine Infrastructure Management Act 2016 and the Town and Country Planning Act 1999 at this time.

4.1.4 Electrical Infrastructure Study Area (EISA)

- 4.1.4.4 The Electrical Infrastructure Study Area (EISA) defines the search area within which the "Whole Project" (see section 3.2 of Chapter 3, Project Description) will be developed and provides a search area within which all RPSS work is undertaken. Figure 4.2 and Figure 4.3 below show the EISAs for the Moir Vannin Offshore Wind Farm (Whole Project) and the Proposed Development respectively.
- 4.1.4.5 The Moir Vannin Offshore Wind Farm EISA (Figure 4.2) includes the Proposed Development area as well as all potential Route to Market (RtM) and grid connection locations for the purposes of RPSS. The Applicant is actively exploring grid connection options in the UK and in Ireland. However, the routes for the RtM Transmission Assets are yet to be determined as are the location and type of the transmission and generation assets at grid connection in the respective jurisdictions (see section 3.3.10 in Chapter 3, Project Description). These options comprise standard grid connections, interconnectors, a Multi-Purpose Interconnector (MPI) and/ or Power to X solutions. Whichever RtM option is ultimately selected will be subject to a separate RPSS and

consenting process, given that the infrastructure will be sited outside of the Isle of Man's Territorial Seas and jurisdiction.

- 4.1.4.6 The Proposed Development EISA (Figure 4.3) displays the Study Area used for RPSS for the purposes of this Scoping Report. The EISA is the area within which all electrical infrastructure of the Proposed Development will be located. The terrestrial part of the EISA includes the Terrestrial Electrical Connection Search Area and landfall down to MLW and represents the Scoping Boundary for the Scoping Opinion sought under MIMA.
- 4.1.4.7 The Terrestrial Electrical Connection Search Area runs from the proposed OnSS locations plus a 200m buffer in the west to the proposed Douglas landfall location in the east. The northern and southern extents of the EISA and Terrestrial Electrical Connection Search Area are straight lines drawn from the edges of the Douglas landfall to the OnSS buffer.
- 4.1.4.8 The offshore part of the EISA comprises the Offshore Array, Offshore Electrical Connection Search Area and landfall up to Mean High Water. This aligns with the Offshore Scoping Boundary for Scoping Opinion being sought under MIMA.
- 4.1.4.9 The Offshore Electrical Connection Search Area is bounded to the east by the limit of the AfL granted to Orsted and to the west by the proposed Isle of Man landfall locations in Douglas and Groudle Beach. The northern and southern extents of the EISA and Offshore Electrical Connection Search Area are straight lines drawn from the centre of the western edge and from the southeastern most corner of the AfL to the landfall locations to create a search funnel within which will be located the Electrical Connection Cable (offshore and terrestrial).



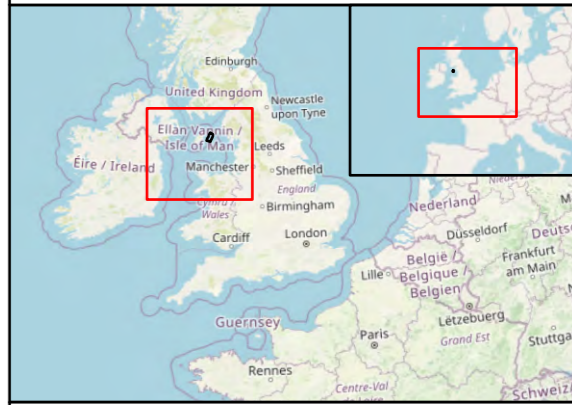
Update to EISA (Version 3):

- EISA extended West to allow connection to Louth Substation in mainland Island (EISA bordering but not entering Northern Ireland Marine Waters)
- EISA extended West into Wales to allow for connection at Connahs Quay Substation

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Figure 4.2: Whole Project EISA

- Area For Lease
- Wind Farm Status**
- Concept/Early Planning
- Consent Application Submitted
- Fully Commissioned
- Substations**
- Substations
- Electrical Infrastructure
- Study Area Version 3 (EISA)
- Marine Planning Region**
- Name**
- England
- Northern Ireland
- Isle of Man
- Scotland
- United Kingdom
- Wales



Coordinate System: ETRS 1989 UTM Zone 30N
 Scale@A3: 1:950,000

0 10 20 40 Kilometers

0 5 10 20 Nautical Miles

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	First issue	26/05/2023

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4.2 RPSS Methodology

4.2.1.4 The methodology applied to the early stage RPSS process is presented in Figure 4.4. The RPSS process will continue throughout the pre-application phase. The final design of the Proposed Development will be a result of the RPSS process and consultation with stakeholders.

Identification of suitable landfall and terrestrial and offshore electrical connection cable corridor options will follow the same RPSS process. First, a search area was defined for which constraints data were collected (the EISA). Second, several options that avoided key constraints were identified within the search area based on Proposed Development land requirements; site visits were undertaken for the landfall and grid connection option (not yet complete for terrestrial Electrical Connection Search Area). Third, the teams within Orsted (i.e. Environment and Consents, Land and Property, Commercial, Technical and Electrical Installation) developed selection criteria for a Black, Red, Amber and Green (BRAG) appraisal. The fourth and next step to be undertaken is for landfall and cable route options to be ranked according to their respective BRAG criteria from most preferred to least preferred. The BRAG ratings have been defined as follows:

- **Black** Showstoppers to development.
- **Red** High potential for the development to be constrained.
- **Amber** Intermediate potential for the development to be constrained.
- **Green** Low potential for the development to be constrained.

Black and Red constraints are critical in determining features that should be avoided wherever possible to avoid consenting risk, reduce EIA complexity and reduce the cost of mitigation. Amber and Green constraints are those that may be more readily minimised or managed by employing appropriate mitigation measures. Based on the BRAG appraisal the number of landfall options will be reduced and the electrical connection cable routes refined, full detail of this refinement process will be presented in the ES. The remaining options will continue to be reduced as preferred options and alternatives are identified and refined for the ES.

Figure 4.4: Route Planning and Site Selection Methodology.

4.2.1.5 Commitments specific to the RPSS may be made to eliminate or reduce potential impacts of LSE. These LSE impacts are identified in the Impacts Register (see Annex 5.B). These commitments become Black or Red constraint areas identified as part of the BRAG appraisal to deliver mitigation to specific features (e.g. species/habitats). All Commitments are presented in the Commitments Register (See Annex 3.A).

4.2.1.6 Table 4.1 presents the current RPSS commitments included at this early stage (pre-scoping) of project development.

Table 4.1: RPSS Commitments.

ID	Measure Proposed	Rationale
Co 12	Designated heritage assets will be avoided by the careful routing of the onshore infrastructure around sensitive locations.	To avoid impacts to heritage assets of high significance.
Co20	Avoidance, where possible, of identified areas of contaminated land, sensitive areas, carbon-rich land and designated areas onshore.	To minimise the impacts of the onshore infrastructure on areas sensitive to the hydrological environment.

4.2.2 Landfall locations

- 4.2.2.4 The Proposed Development includes scope to bring renewable electricity from the Offshore Array to the electrical grid in the Isle of Man. Potential grid connection options at Lord Street and/or Middle River and a proposed potential landfall location at Groudle Beach have been suggested by MU. In addition to these, landfall in Douglas to facilitate electrical cable transmission to Lord Street or Middle River is being explored by the Applicant.
- 4.2.2.5 The coastline in Douglas and at Groudle Beach has therefore been sub-divided into zones based upon geographical areas. At Scoping, the Applicant is presenting two proposed landfall areas, sub-divided into zones and shown in Figure 4.5 below. The next steps in the landfall site selection process are described below in section 4.3.2.

4.2.3 Onshore Substation site

- 4.2.3.4 The exact grid connection location within Douglas is yet to be determined and will be concluded in consultation with MU and the DoI. Potential grid connection locations at Middle River substation located at the existing Pulrose Power Plant and Lord Street are current options that are being actively explored. Their indicative location is presented on Figure 4.5.

4.2.4 Offshore and Terrestrial Electrical Connection Cable

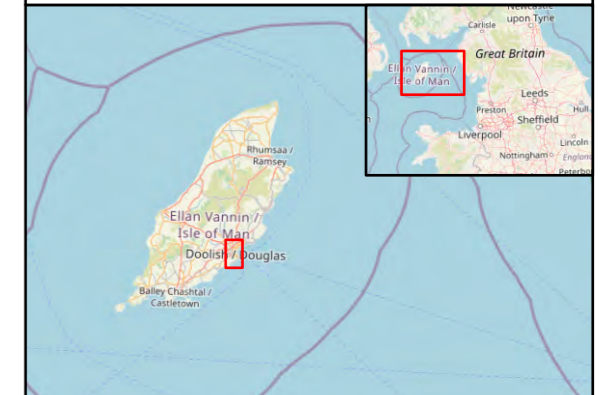
- 4.2.4.4 The first stage of the Electrical Connection Cable (offshore and terrestrial) route development comprised the creation of straight lines to provide shortest distances between the AfL and the potential landfall locations at Douglas and Groudle. At Douglas the straight line was continued on to the potential grid connection locations at Middle River and Lord Street (Figure 4.5). For the Offshore Electrical Connection Cable(s) these lines began from the centre point of the AfL (indicative Offshore Substation locations) to the two indicative landfall locations (Figure 4.5). For the Terrestrial Electrical Connection Cable these lines began from the Douglas Harbour indicative landfall to the potential OnSS locations.
- 4.2.4.5 For the Offshore Electrical Connection Cable and following the RPSS methodology, environmental constraints data were then gathered, and BRAG criteria applied. These BRAG constraints were then added to the Proposed Development specific RPSS GIS map and the Offshore Electrical Connection Cable routed to avoid black and red criteria where possible. Each time the cable was rerouted to avoid criteria, the rerouting was marked on the map and given an ID number and justification, these will be presented with the final route within the ES at Application. This process provided initial Offshore Electrical Connection Cable routes. The initial routes are indicative and whole Electrical Connection Search Area is being considered for the purposes of seeking a Scoping Opinion.
- 4.2.4.6 Work on the route planning of the Terrestrial Electrical Connection Cable is subject to the outcome of discussions with MU on the OnSS and Landfall location. As such the next steps for this process are described below in section 4.3.4.



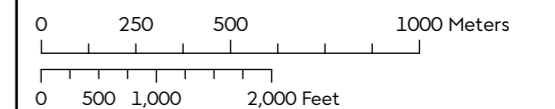
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Figure 4.5: Terrestrial Electrical Connection Search Area

Name	Isle of Man Landfall Subzones (Version 3)
Offshore Cable to Douglas Bay (Version 3)	B1
Straight Line From AfL to Douglas Bay	B2
Straight Line From AfL to Groudle Bay	B3
Offshore Cable to Groudle Bay (Version 3)	C2
Indicative Electrical Connection Cable Route	C3
	C4
	D1
	D2
	Scoping Boundary
	Substations



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:20,000

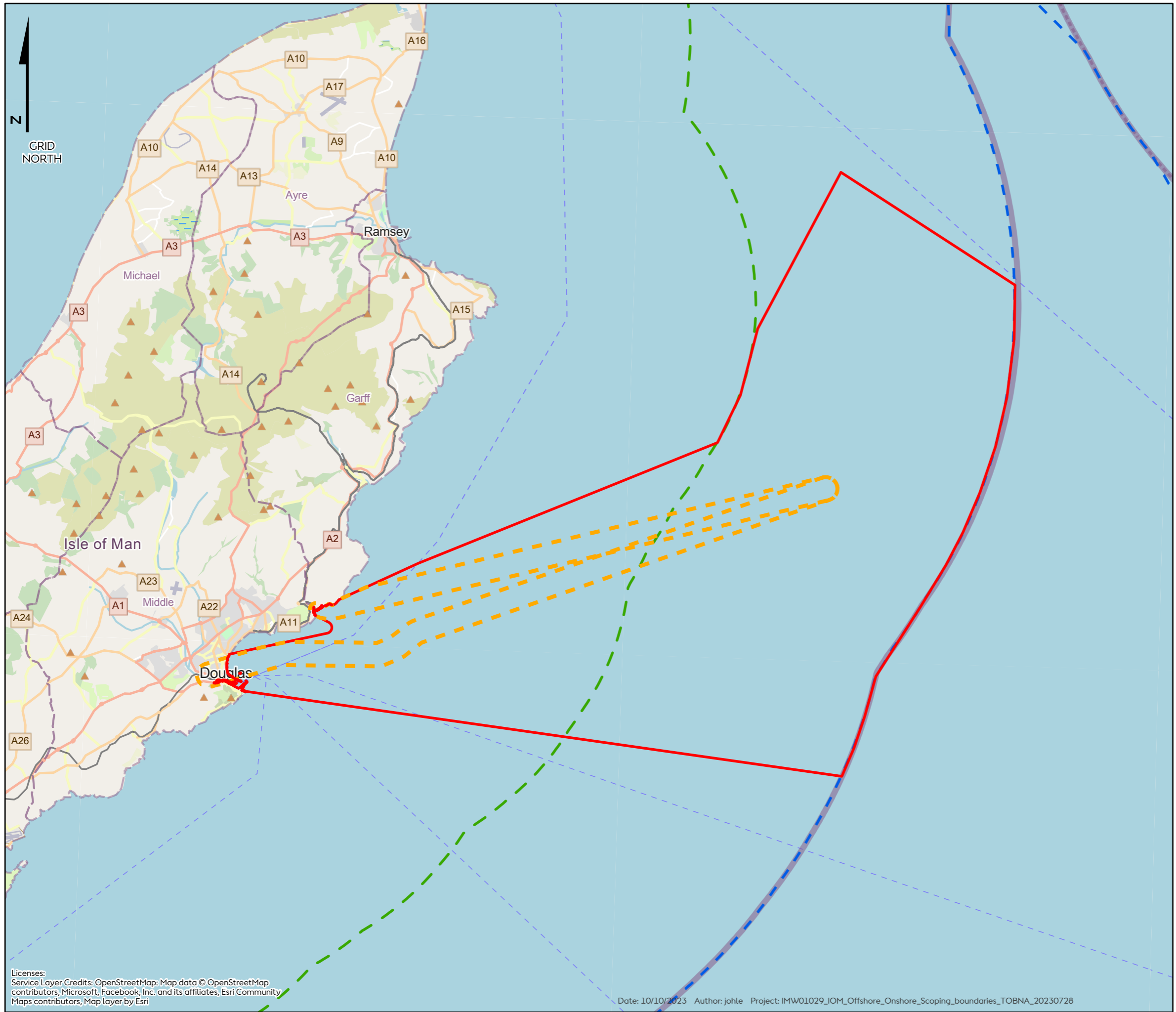


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Figure 4.5: Terrestrial Electrical Connection Search Area
Document no: IMW01040
Created by: JOHLE
Checked by:
Approved by: HATOW



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Hybrid Reference Layer: Esri Community Maps Contributors, Esri UK,
Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS



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Figure 4.6: Iteration 1 of the Offshore Electrical Connection Cable Route and Offshore Scoping Boundary

- - - 6nm Limits
- - - 12nm Territorial Sea Limits
- Scoping Boundary
- Indicative Electrical Connection Cable Route



Coordinate System: British National Grid
 Scale@A3: 1:160,000

0 2 4 8 Kilometers

0 1 2 4 Nautical Miles

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	First issue	28/07/2023

Figure 4.6: Iteration 1 of the Offshore Electrical Connection Cable Route and Offshore Scoping Boundary
 Document no: IMW01029
 Created by: JOHLE
 Checked by:
 Approved by: TOBNA



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4.3 Refinement and next steps

4.3.1.4 The scoping boundary presented in this Scoping Report is a composite of the search areas adopted at this stage in early development, design and RPSS to identify the potential location of the landfall, permanent cable area and temporary works corridor, and within which any infrastructure may be moved or deviated in response to the Scoping Opinion and continued stakeholder feedback. As design and RPSS development continues, the number of landfall options, areas and width of the corridors will reduce as the Proposed Development matures through the development phase towards the making of an application for consent in Q1 2025. This incremental process of design refinement is set out in Table 4.2.

Table 4.2: Refinement of Design and RPSS Development.

Stage	Description
Scoping	<p>Terrestrial and Offshore Electrical Cable Connection(s):</p> <p>Terrestrial Permanent Cable Area: the area at this stage in design development within which the final 45 m working width for the cable is planned to be located.</p> <p>Terrestrial Temporary Works Area: the area at this stage in design development within which 60 m temporary works (e.g. construction and storage compounds) are planned to be located and within which the 45 m Permanent Cable Area may be deviated.</p> <p>Offshore Electrical Connection Cable Corridor: the area at this stage in design development within which the final 1km working width for the cable is planned to be located.</p> <p>Onshore Scoping Boundary: the search area adopted at this stage in design development to identify the permanent and temporary works footprints of the Onshore Electrical Cable Connections and grid connection. This boundary includes the Terrestrial Electrical Connection Search Area which is the search area for the Terrestrial Electrical Connection Cable between landfall and the Isle of Man grid connection.</p> <p>Offshore Scoping Boundary: the search area adopted at this stage in design development to identify the permanent and temporary works footprints of the Offshore Electrical Connection Cable and Offshore Array. This boundary includes the whole Offshore Electrical Connection Search Area which is the area within which all marine components of the Proposed Development will be located.</p>
MIC Application	<p>Terrestrial Electrical Connection Corridor:</p> <p>Permanent Cable Area (45m): Area for all permanent (electrical cables and Transition Joint Bays (TJBs)).</p> <p>Compound: construction and/or storage compounds outside of the permanent cable corridor for auxiliary works.</p> <p>Access: Area required for access (temporary or permanent) to the construction and/or operation and maintenance activities.</p> <p>All of the above will be located within the Onshore Scoping Boundary.</p> <p>Landfall: A preferred cable landfall site selected from within the Scoping Boundary.</p> <p>Offshore Electrical Connection Cable corridor (1km): the area within which the export cable route and temporary works area are planned to be located. Located within the Offshore Scoping Boundary.</p>

4.3.2 Landfall

4.3.2.4 Once a decision has been taken on the consenting process for the onshore infrastructure, a preferred landfall location will be selected from the two proposed

at scoping. These zones, which may be further sub-divided into landfall sub-zones if needed, will be given BRAG ratings using the RPSS methodology described in Figure 4.4 above and a refined landfall site will be chosen from within those two zones presented at Scoping.

4.3.3 Onshore Substation

4.3.3.4 As with the landfall, once a decision has been taken on the consenting process for the onshore infrastructure, the preferred OnSS location will be confirmed. Within this OnSS site, the RPSS methodology will be followed to using BRAG ratings to site the OnSS infrastructure appropriately within the available site. Refinement of the final design will be undertaken based up consultation with stakeholders and further data collection.

4.3.4 Offshore and Terrestrial Electrical Connection Cable

4.3.4.4 For the Offshore Electrical Connection Cable, the next step will be to refine these initial cable routes to reduce the traversal through amber constraints. As with the Black and Red constraints, each time the cable is rerouted to avoid criteria, the rerouting will be marked on the map and given an ID number and justification. Once a final route is established a buffer area will be applied to represent the indicative permanent and temporary works area. Further refinement of the cable routes will be undertaken following Scoping Report submission, stakeholder feedback and further data collection.

4.3.4.5 For the Terrestrial Electrical Connection Cable, once the landfall location is finalised and a decision provided on the consenting of the onshore works, RPSS will begin with the process of routing the Terrestrial Electrical Connection Cable from landfall to the OnSS. As with the Offshore process, a buffer (to be confirmed) will be applied around the centreline from Douglas landfall to the OnSS to represent the indicative permanent and temporary cable works areas.

4.4 Questions to Consultees

- Question 4.1: Is the process by which the Proposed Development's design has been, and will be, refined via the RPSS process clear?

5 EIA Methodology

5.1 Introduction

- 5.1.1.1 This Chapter describes the assessment methodology that will be used throughout the EIA process to identify and evaluate the potential impacts associated with all phases of the Proposed Development. The EIA methodology also applies to the potential cumulative and in-combination effects associated with the RtM Transmission Assets. It outlines the overall assessment approach for determining the Likely Significant Effects (LSEs) of the Proposed Development on the receiving environment.
- 5.1.1.2 Information on topic-specific methodologies, including surveys, are presented within the methodological sections of the relevant Chapters and supporting Annexes of this Scoping Report. The EIA uses a systematic, evidence-based approach in order to evaluate and interpret the potential impacts and subsequent effects of the Proposed Development on physical, biological and human receptors.

5.2 EIA guidance

5.2.1 Guidance

- 5.2.1.4 This EIA methodology will draw upon several additional guidance and best practice documents. Examples are set out below:
- Industry EIA Guidance Documents:
 - A Guide to Developers for proposed works in the Isle of Man Territorial Seas (2016)
 - Assessment of the environmental impact of offshore wind-farms (OSPAR, 2008);
 - Offshore Wind Farms: Guidance Note for Environmental Impact Assessment in Respect of Food and Environment Protection Act 1985 and Coastal Protection Act 1949 requirements (Cefas, 2004);
 - Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Cefas, 2012);
 - Cumulative Impact Assessment Guidelines – Guiding Principles for Cumulative Impact Assessment in Offshore Wind Farms (RenewableUK, 2013);
 - Industry Evidence Programme Offshore Wind Farms - Pilot Industry Evidence Base, (The Crown Estate, IEMA, Royal Haskoning DHV, 2018);
 - Professional EIA Guidance Documents:
 - Guidelines for Environmental Impact Assessment (IEMA, 2004);
 - Guide to Shaping Quality Development (IEMA, 2016a);
 - Delivering Proportionate EIA, a Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017);
 - PINS Advice Notes:
 - Advice Note Six: Preparation and Submission of Application Documents (PINS, 2020a);
 - Advice Note Nine: Rochdale Envelope (PINS, 2018);

- Advice Note Eleven: Working with public bodies in the infrastructure planning process (PINS, 2017c);
- Advice Note Twelve: Transboundary Impacts and Process (PINS, 2020c); and
- Advice Note Seventeen: Cumulative Effects assessment (CEA) (PINS, 2019).

5.2.1.5 Each technical Chapter of this Scoping Report also refers to specific guidance documents that may be relevant in scoping the approach to undertaking those assessments.

5.3 Approach to EIA

5.3.1.4 Some components of the Moir Vannin Offshore Wind Farm Whole Project will be located outside of the Isle of Man's Territorial Seas. This includes the RtM assets being explored for connection in England, Wales, and the Eire (see section 3.3.10 of the Chapter 3, Project Description for further details). These elements of the Whole Project outside of the Isle of Man's Territorial Seas will be the subject of separate consent application(s) under the relevant legislative and consenting regimes; therefore they will also require their own specific EIA (see section 3 of Annex 5.C Scoping Strategy).

5.3.1.5 In relation to impacts and effects outside of Isle of Man Territorial Seas, sections 5.6, 5.7 and 5.8 of this Chapter explain the assessment of Transboundary Impacts, Inter-related Effects and Cumulative Effects respectively.

5.3.2 General Approach

5.3.2.4 The purpose of the EIA process is to inform the Isle of Man Government on the potential LSEs associated with the Proposed Development during construction, operation and maintenance, and decommissioning.

5.3.2.5 Each EIA technical Chapter will identify the potential LSEs arising because of the Proposed Development. This will be done by characterising the baseline environmental conditions (i.e., the current state of the environment without the Proposed Development) and assessing the effects on the existing environment resulting from the construction, operation and maintenance, and decommissioning of the Proposed Development. A MDS will be applied as part of the assessment process for each topic, receptor and potential impact considered. Impacts on identified receptors will be assessed. Examples of receptors are: the human environment (e.g., residents of buildings, employees of businesses, users of passenger vessels), the physical environment (e.g., Registered Buildings, shipwrecks, marine processes) and the biological environment (e.g., onshore and offshore sites of ecological importance, protected species).

5.3.2.6 The remainder of this Chapter introduces the approaches to key aspects of the EIA.

5.3.3 Proportionate EIA Approach

5.3.3.4 Since the advent of the EIA regime, it is widely acknowledged that EIA practice has become increasingly complex and the scope of assessment and page count of EIAs has increased. As noted by IEMA in its 2017 report (IEMA, 2017), the need for delivering proportionate EIA is a key issue.

5.3.3.5 The IEMA notes '*... the drive for improved quality in EIA, combined with the UK's evidence-based and precautionary approach, has led to substantial challenges for the future of the practice. The increased complexity of multi-faceted decisions and wider range of stakeholders who seek transparency and clear audit trails, has further compounded the problems. The combined impact of the above good intentions has often led to individual EIAs being too broadly scoped and their related Environmental Statements to be overly long and cumbersome.*'

- 5.3.3.6 Developing a more proportionate EIA will enhance understanding of the key environmental impacts of a proposed development and ensure that key findings are accessible to decision-makers and the public, reducing potential confusion and undue delay.
- 5.3.3.7 Additionally, PINS Advice Note Six: Preparation and Submission of Application Documents (PINS, 2020a), whilst not directly relevant to the Isle of Man, contains helpful guidance for major infrastructure projects. The advice note encourages applicants to think about the size of documents submitted with duplication and superfluous content discouraged. ESs are welcomed that are proportionate to the scale and complexity of the EIA undertaken, although it is appreciated that for NSIPs, such documentation will comprise several volumes.
- 5.3.3.8 The Applicant's approach to proportionate EIA is described in Annex 5.A Proportionate EIA Position Paper. This position paper details the tools that will be utilised throughout the consenting process to deliver a proportionate EIA, these are summarised here:
- An Impacts Register: which lists all potential impacts identified as part of the Proposed Development's development, construction and operation; and
 - A Commitments Register: throughout development the Proposed Development will make commitments to mitigate, where possible, against the impacts identified in the Impacts Register.
- 5.3.3.9 In addition to these documents, there are multiple methods through which a proportionate EIA will be delivered. These are further described in section 5.4 below.

5.4 Proportionate Approach to Scoping

5.4.1 Overview

- 5.4.1.4 One key aspect of the approach to scoping is the initial identification of the LSEs of the Proposed Development, full details on the approach to scoping are available in Annex 5.C, Scoping Strategy. This initial assessment of LSEs has been prepared based upon:
- Knowledge acquired by the EIA team on baseline conditions;
 - Definition of the Proposed Development;
 - Relevant policy, guidance, standards and best practice;
 - The evidence base and experience of consenting similar projects passing through similar consenting systems;
 - Topic-specific criteria for impact magnitude, receptor sensitivity to impacts and significance of effect; and
 - The professional judgement of experts.
- 5.4.1.5 In general, confidence in the identification of LSE in this Scoping Report can be drawn from the wealth of baseline data already available and the professional experience and judgement of what constitutes the Likely Significant Effects of offshore wind projects such as the Proposed Development that have previously been subject to EIA in other locations (for example in UK waters).

5.4.2 Route Planning and Site Selection

- 5.4.2.4 RPSS is described fully in section 4.2 of Chapter 4, Site Selection & Consideration of Alternatives. The RPSS process aims to avoid or reduce environmental impacts by committing to avoid the most sensitive, important, or valuable features early in

project design. To support the early phase RPSS work, key sensitive receptors have been identified and ranked using a BRAG system according to sensitivity. As the RPSS process continues, commitments may be made to support RPSS work and included in Annex 3.A, Commitments Register.

5.4.3 Commit, Consult, Design

5.4.3.4 The Applicant proposes a 'Commit, Consult, Design' ethos to the Proposed Development with identified commitments being integrated into development, driving design and minimising adverse environmental effects.

5.4.3.5 The three stages of this process are:

- Commit: Commitments are provided by the Applicant to mitigate (reduce or eliminate) LSE with these set out in the Commitments Register including details of how commitments are secured.
- Consult: The project parameters and associated commitments to reduce or avoid LSE will be consulted on widely.
- Design: The earliest stages of the design process relate to route planning and site selection will incorporate a number of commitments to avoid or reduce LSE.

5.4.3.6 By using this approach, the Applicant aims to avoid or reduce impacts by committing to avoid the most sensitive, important or valuable features early in project design. Applying this ethos will enable a reduction in the scope of the EIA and the amount of assessment required.

5.4.3.7 The Commit, Consult, Design ethos will be implemented through a series of design workshops and an integrated Commitments Register to ensure environmental considerations are significant factors influencing design. For further details on the "Commit, Consult, Design" ethos, see Annex 5.A, Proportionate EIA Position Paper.

5.4.3.8 At this stage in the development process, all commitments have been suggested by the Applicant and the EIA team. Commitments are integral to the delivery of proportionate EIA process and how they are secured is via an iterative process, being suggested by Moir Vannin team (including EIA professionals), consultees (statutory and non-statutory) and members of the public. Commitments are then reviewed, modified (if need be to improve their functionality and specificity) and approved for inclusion in the application (see Annex 3.A Commitments Register).

5.4.4 Developable Area Approach (DAA)

5.4.4.4 In keeping with the approach to Proportionate EIA, due consideration will be given to the size and location of:

- The generation assets (wind turbines and Array Cables) within the Offshore Array;
- The transmission assets (substations, interlink and export cables) within the Offshore Array;
- The transmission assets (Offshore Electrical Connection Cable) to landfall in the Isle of Man;
- The transmission assets (Terrestrial Electrical Connection Cable(s)) from landfall in Douglas to Grid Connection in Douglas; and
- The RtM transmission assets to the UK and/or Eire located within the AfL and the Transmission Asset Funnel (within 12 km of the Isle of Man Territorial Seas).

- 5.4.4.5 These factors will be captured internally as part of the “Developable Area Approach” (DAA), which considers physical, biological and human constraints in refining the developable area, with the aim of balancing consenting and commercial considerations with technical feasibility for construction.
- 5.4.4.6 This approach will also be aided through engagement opportunities with key stakeholders on the DAA to gather feedback as early as possible on the Proposed Development. This pro-active and early engagement aims to refine the site to reduce constraints where possible and provide stakeholders with opportunities to influence the final shape and size of the Proposed Development.

5.5 Assessment of Effects

- 5.5.1.4 Throughout the EIA, the term ‘effect’ expresses the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria. Impacts can be direct, indirect, secondary, cumulative, inter-related or transboundary. The impacts may be adverse, beneficial or result in no change at all. Impacts are described in relation to the receiving environment, which is described as the receptor (or series of receptor groups). The result of an impact on a receptor is termed the ‘effect’. For example, pile driving during construction (action) may result in a temporary increase in noise levels during construction (impact) and cause local residents (receptors) to experience temporary disturbance (effect).
- 5.5.1.5 The following sections describe the assessment of magnitude, sensitivity and significance in more detail. It should be noted that each topic Chapter describes the specific criteria for that topic, as well as any deviations from industry assessment guidance.
- 5.5.1.6 As set out in various widely-used methodologies (e.g., Design Manual for Roads and Bridges (DMRB) (Highways England, 2019)) most technical topics will assess the likely significance of an effect using the methods described in the sections below and using the matrix illustrated in Table 5.2.
- 5.5.1.7 For some topics, the significance of an effect is established by comparing the magnitude of an impact with a quantified standard. This quantified standard is based on a level at which recognised effects are triggered (e.g., sleep disturbance for airborne noise). Such topic-specific methodologies are described in detail within the relevant technical Chapters as identified by suitably qualified technical experts.
- 5.5.1.8 This EIA methodology has been used in developing this Scoping Report and will continue to be used throughout the EIA and resulting ES. If deviations from this overarching methodology have occurred within technical Chapters of this Scoping Report the approach used has been clearly set out. The methodology has been used as overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement.

5.5.2 Assessing the Magnitude of Impact

- 5.5.2.4 The magnitude of an impact depends on a range of factors:
- Spatial extent: the geographical extent over which the impact occurs. For example, is the impact spatially limited to the footprint of the project, or are there other factors that extend the impact beyond this?
 - Temporal extent: the duration over which the impact occurs. For example, is this limited to a brief construction period, or will the impact occur over the lifetime of the project?

- Frequency of occurrence: is the impact limited to one occurrence or will it occur repeatedly over the duration of the project?
- Severity - what is the expected degree of change relative to the baseline?

5.5.2.5 Based on the criteria above, the magnitude of an impact is assessed as being within one of the groups shown in Table 5.1 and is also assigned a direction of 'adverse' or 'beneficial':

Table 5.1: Magnitude of impact and typical descriptions (Source: DMRB, 2019).

Magnitude of Impact (change)		Typical Description
Major	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features, or elements
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality
Moderate	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.
No Change		No loss or alteration of characteristics, features, or elements; no observable impact in either direction.

5.5.2.6 Some technical Chapters present a 'magnitude of impact' table, where the assessment approach deviates from the standard DMRB approach. This change in approach presents how the magnitude of impacts is defined based on topic-specific criteria.

5.5.3 Assessing the Sensitivity of Receptors

5.5.3.4 The sensitivity of a receptor, or group of receptors, is dependent on its tolerance to change and its ability to recover from being impacted. The sensitivity of a receptor can therefore be determined by the following factors:

- **Adaptability:** the degree to which a receptor can avoid or adapt to an impact;
- **Tolerance:** the ability of a receptor to accommodate a temporary or permanent change;
- **Reversibility and recoverability:** the extent to which a receptor will recover following an impact;

- **Value and importance:** a measure of the importance of a receptor in terms of its relative ecological, social or economic value or status.

5.5.3.5 The sensitivity of a receptor is defined within each Chapter on the following scale:

- Negligible;
- Low;
- Medium;
- High; or
- Very high.

5.5.3.6 In some assessments, the probability of an impact occurring is taken into account rather than the sensitivity of receptors. For example, when determining the LSE of an earthquake affecting the Proposed Development, the probability of an earthquake of a magnitude that would impact the Proposed Development would be considered. Where a topic-specific methodology is used, following industry guidance, this is clearly explained within the methodology section of the Chapter.

5.5.4 Assigning Significance

5.5.4.4 The significance of an effect, either adverse or beneficial, is determined using a combination of the impact magnitude and environmental sensitivity. A matrix approach is used throughout the EIA to ensure consistent and comparable assessments. The terms assigned to categorise the significance of effects are described in Table 5.2 below, which also illustrates the assessment matrix for determining effect significance. The descriptions for significance, shown in Table 5.3 below, shall be applied by the Applicant.

Table 5.2: Significance Matrix (Source: DMRB, 2019).

Sensitivity (Environmental Value)	Magnitude of Impact (degree of change)					
	No change	Negligible	Minor	Moderate	Major	
Very High	Neutral	Slight	Moderate or large	Large or very large	Very large	
High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large	
Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large	
Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate	
Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight	

Table 5.3: Significance Categories and Typical Descriptions (Source: DMRB, 2019).

Significance category	Typical description	Likely Significant Effect (LSE)
Very large	Effects at this level are material in the decision-making process.	LSE
Large	Effects at this level are likely to be material in the decision-making process.	LSE

Significance category	Typical description	Likely Significant Effect (LSE)
Moderate	Effects at this level can be considered to be material decision-making factors	LSE
Slight	Effects at this level are not material in the decision-making process.	No LSE
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.	No LSE

5.5.5 Determining the Requirement for Additional Mitigation and Monitoring

- 5.5.5.4 The Applicant's approach to embedded mitigation (via commitments) is described in paragraphs 2.1.1.4 and 2.1.1.5 of Annex 5.A, Proportionate EIA Position Paper. This describes the process and importance of embedding mitigation measures, via primary commitments, within the design of the Proposed Development and how this has been incorporated into the assessment. Where the impact assessment determines significant effects may still occur, further mitigation measures (secondary commitments) may be required.
- 5.5.5.5 As a result of consultation, engagement and agreement with stakeholders, the need for monitoring may also be identified to:
- Validate the conclusions of the assessment or the effectiveness of mitigation;
 - Understand any undescribed baseline conditions; and
 - Resolve uncertainty within assessments, in relation to novel receptors or assessment techniques that are not in relation to the above 2 points.
- 5.5.5.6 The extra mitigation (secondary commitments) may be deemed necessary where an effect is significantly adverse in EIA terms, even with embedded mitigation (primary commitments), but additional mitigation measures (secondary commitments) are available to reduce the level of effect.
- 5.5.5.7 Where relevant, these additional mitigation measures are outlined in the technical Chapters within the commitments section.

5.6 Transboundary Impacts

- 5.6.1.4 Transboundary impacts are those that may arise in the environment of other states outside of the Isle of Man jurisdiction. The need to consider these is enshrined within the United Nations Economic Commission for Europe (UNECE) Convention on EIA in a Transboundary Context, adopted in 1991 in the Finnish city of Espoo (the 'Espoo Convention').
- 5.6.1.5 The Isle of Man is a signatory (via the UK Government) to the Espoo Convention as per declaration six, and it is anticipated that the EIA provisions to be enacted under MIMA will require transboundary consultation.
- 5.6.1.6 The methodology for the transboundary impacts assessment is described in detail in Annex 5.D, Transboundary Screening. Potential transboundary effects are then assessed as relevant within each technical Chapter.

5.7 Assessment of Inter-related Effects

- 5.7.1.4 The inter-related effects assessment considers the potential for multiple impacts from the construction, operation or decommissioning of the Proposed Development on the same receptor to result in a greater effect than each impact in isolation. Broadly, inter-related effects are divided into two categories:

- Project lifetime effects: Those arising throughout more than one phase of the project (e.g. during construction and operation) to interact to potentially create an effect of greater significance than for each project phase considered in isolation; and
- Receptor-led effects: Potential for the scope of two or more effects to interact (e.g. air quality and noise impacts to the same receptor during the construction phase of a project) to create an effect of greater significance than each effect in isolation.

5.7.1.5 The inter-related effects assessment incorporates the findings of the individual topic assessments to describe the potential additional effects that may be of greater significance than when each is considered in isolation. Where the potential for inter-related effects exists, a qualitative assessment will be undertaken and presented in the ES at the point of Application, drawing on expert judgement. However the approach can be described by the following key steps:

- Identification of relevant receptors from the assessment of significance within each technical Chapter;
- Identification of the source-impact-receptor pathways that can affect the receptor in question and identification of the technical Chapter where those are described and assessed;
- Identification of potential effects on these receptor groups through a review of assessments; and
 - Source: the cause or activity that may lead to a receptor being affected (e.g. high rainfall)
 - Pathway: the route by which the source can reach the receptor (e.g. flood routes)
 - Receptor: the specific component that could be affected (e.g. people and the environment)
- Identification of potential effects on these receptor groups through a review of assessments; and
- Production of the inter-related effects assessment, using a tabulated approach listing all potential project lifetime and receptor-led effects.

5.7.1.6 It is important to note that although it may not be explicit for some topics, consideration of inter-related effects is an inherent part of the assessment. For example, an ecological receptor may be affected by direct loss of habitat, experience disturbance from the visible presence of people, may be disturbed by noise and may be affected by dust deposition on remaining habitat. In these cases, the links with other assessment topics will be clearly referenced and explained within the relevant assessment Chapters of the ES.

5.8 Assessment of Cumulative Effects

5.8.1.4 In accordance with standard EIA practice, consideration has been given as to whether any other elements within the Whole Project or external projects would contribute to creating, with the Proposed Development, a cumulative impact that would be greater than would occur if the Proposed Development was being developed in isolation (either beneficial or adverse).

5.8.1.5 PINS has produced 'Advice Note 17: Cumulative Effects Assessment' (December 2019), which provides guidance on a staged process that can be used for cumulative effects assessments for any development which is consented under the Planning Act 2008 in England and Wales. Advice Note 17 details a four-step process that can be followed by developers and which has been applied for the Proposed Development. PINS Advice Note 17 identifies those other major developments which should be taken into consideration in a CEA. The Proposed Development will consider cumulative effects in relation to the following, having given due regard to the guidance outlined in these advice notes:

- Tier 1: Other Moir Vannin Offshore Wind Farm elements;
- Tier 2: Developments that are operational and under construction;
- Tier 3: Developments that are consented;
- Tier 4: Developments where an application has been submitted; and
- Tier 5: Developments where a Scoping Report has been submitted.

5.8.1.6 The CEA consists of a screening exercise of projects, plans and activities followed by the assessment of the combined envelopes of the projects screened in, together with the Proposed Development. The screening process is based upon the potential for cumulative effects, the spatial overlap of effects extents, the temporal overlap of effects, and data confidence. Specific criteria for each type of project, plan or activity are used to develop a 'long-list' of projects to be considered.

5.8.1.7 Once a longlist is defined, this will be further refined using specific criteria for each EIA topic to develop 'shortlists' of projects that are carried through to the cumulative effects assessment.

5.8.1.8 In assessing the potential for cumulative effects, it is important to bear in mind that some projects, predominantly those proposed or not yet determined, may not actually be taken forward. The CEA can also only consider the publicly available project information, which may require certain assumptions, or qualitative assessments, to be made where information is not publicly available. Therefore, there is a need to build in a level of confidence with respect to the likely cumulative envelope that may result in cumulative effects.

5.8.1.9 For this reason, all projects, plans, and activities will be allocated into 'tiers' as outlined above, reflecting their current status in the planning and development processes. This allows the CEA to present several future development scenarios, each associated with a different level of certainty and likelihood of eventually being built out. Appropriate weight may therefore be given to each tier when considering the potential for cumulative effects. The 'short-list' will be reviewed and updated during the preparation of the ES, with projects, plans and activities that have been brought forward post-finalisation of this Scoping Report.

5.8.2 Assessment of Whole Project Effects

5.8.2.4 As described in Chapter 3, Project Description, the Moir Vannin Offshore Wind Farm currently comprises of multiple elements which together form the Whole Project. These elements may be located in a number of geographical regions and as a result are subject to different consenting regimes. Only one primary element of the "Whole Project" is located in the Isle of Man and within its Territorial Seas, which is referred to throughout this Report as the "Proposed Development". The other elements of the "Whole Project" are the Operation and Maintenance (O&M) facilities and the RtM Transmission Assets which includes P2X. For further information, see Chapter 3, Project Description.

- 5.8.2.5 As set out in the EIA Directive, one of the primary objectives of the EIA process is to allow decision makers to fully understand the potential significant effects that all elements of a project could have upon the receiving environment.
- 5.8.2.6 Furthermore, to ensure a transparent and comprehensive assessment, and in accordance with best practice, an applicant bringing forward an EIA qualifying development should approach the EIA process with consideration to the 'whole project' and not simply one project element in isolation from the others.
- 5.8.2.7 This will clearly be a critical issue on this project as a number of elements of the 'Whole Project' will be located outside of the Isle of Man and its Territorial Seas and are therefore subject to other consenting regimes, as further described in Annex 5.C, Scoping Strategy. Therefore, the Applicant will ensure this is adequately considered and dealt with at this early stage, to ensure environmental impacts arising from other elements of the Whole Project are included within the scope of the assessment of all aspects of the project.
- 5.8.2.8 The Applicant will do this by including the elements of the Whole Project that do not comprise the Proposed Development in the CEA in this EIA.
- 5.8.2.9 As these other project elements are likely to be undergoing further development and refinement during the course of the EIA, the Applicant will ensure that the most up to date technical information is available to the project team at the time of the assessment and this is assessed in this EIA. The technical details may include:
- Potential export cable corridors to England, Wales or Eire.
 - Potential landfall locations within these jurisdictions.
 - Potential substation/ grid connection locations.
 - Potential RtM transmission assets to England, Wales or Eire.
- 5.8.2.10 This approach will ensure that this EIA maintains a comprehensive and all-encompassing approach which considers all elements of the 'Whole Project' and not simply the components that comprise the Proposed Development for the purposes of this EIA.
- 5.8.2.11 Whilst the RtM Transmission Assets do not form part of the Proposed Development, a Scoping Opinion is being sought for their potential to give rise to cumulative and in-combination effects on receptors within the Isle of Man jurisdiction.

5.9 Structure of Environmental Statement

- 5.9.1.4 The ES will provide an assessment of the identified LSEs in EIA terms, arising from the Proposed Development, using the most contemporary data at the time of the assessment.
- 5.9.1.5 The potential LSEs of the Proposed Development will be assessed for each identified topic as agreed through this scoping process and through subsequent consultation and engagement with stakeholders, by comparing the baseline environmental conditions with the expected construction, operation/maintenance and decommissioning of the Proposed Development. The baseline environment for the ES will be determined through studies and surveys as agreed through consultation and engagement with the relevant stakeholders, including on this Scoping Report.
- 5.9.1.6 The Chapters within the ES will be split by technical topic and will include:
- **Legislation, policy and guidance:** a summary of the relevant legislation and policy that has been taken into account in assessing each individual topic;

- **Consultation:** a summary of the consultation responses received to date from statutory and non-statutory consultees through scoping, topic group meetings and direct consultation, and how regard has been had for these in the assessment presented in the ES and the Proposed Development as a whole.
- **Scope and methodology:** details the extent of the Study Area, describing the baseline data sources and survey methodologies, and the topic-specific detail on the approach to assessment;
- **Baseline environment:** a description of the existing environmental baseline conditions, drawing on the relevant data sources, as well as a description of the anticipated evolution of the baseline over the lifetime of the Proposed Development (the “future baseline”);
- **Key parameters for assessment:** a summary of the potential impacts and the MDS assessed for each;
- **Commitments:** detail on any commitments that have been identified and adopted as part of the evolution of the project design of relevance to the topic;
- **Environmental impact assessment:** an assessment of the significance of any identified effects (during construction, operation/maintenance and decommissioning), taking account of the magnitude of impacts, sensitivity of receptors, any embedded mitigation, identification of any further mitigation measures required, and an assessment of the confidence in the conclusions of that assessment;
- **Identification of residual effects:** the residual effect taking into account further mitigation (where necessary) and/ or monitoring requirements;
- **Cumulative effects assessment:** an assessment of any cumulative effects arising from interaction between the Proposed Development and other plans, projects or activities that have the potential to also affect receptors assessed in the Proposed Development’s EIA;
- **Inter-related effects:** an assessment of the potential for there to be multiple impacts from the construction, operation or decommissioning of the Proposed Development that effect the same receptor and result in a greater effect than each impact when considered in isolation; and
- **Transboundary effects:** an assessment of any impacts arising from the Proposed Development on the environment of other countries.

6 Consultation

6.1 Overview

- 6.1.1.1 This Chapter provides details of the consultation which will be undertaken to support an application for MIC under MIMA and planning permission under TCPA. Both consents are required and the route to consents and promoter are yet to be determined (see paragraph 1.6.1.2 in Chapter 1, Introduction).
- 6.1.1.2 The legislation under which a developer can seek consent for the elements of an offshore wind farm seaward of MHW in the Isle of Man Territorial Seas is currently in a transitional period, because the provisions of MIMA are not yet in operation, and secondary legislation that will set out how the process will operate is currently being developed under MIMA by the Isle of Man Government, which is anticipated to provide further detail on consultation requirements. These requirements will be incorporated within the consultation requirements set out herein and presented within the ES to accompany the consent application(s).
- 6.1.1.3 Currently there are no specific consultation requirements under the TCPA, and therefore the Applicant will follow the requirements as set out in MIMA (see section 6.3) for the offshore components and voluntarily adopt these for the onshore components of the Proposed Development.
- 6.1.1.4 This Chapter should be read in conjunction with the Community Engagement & Consultation Action Strategy (CECAS) which sets out the Applicant's approach to engagement with the local community (see section 1.8.4 and Appendix 6.A, Community Engagement Consultation & Action Strategy (CECAS)).

6.2 Consultation Scope

- 6.2.1.4 The consultation set out herein relates to the Proposed Development, including WTCs, Array Cables, Interlink Cables, Offshore Substations (all within the Offshore Array) and the Electrical Connection Cable to the Electricity Grid in the Isle of Man and the onshore substation. The relationship between the Proposed Development and Whole Project is presented graphically in Figure 6.1.
- 6.2.1.5 It should be noted that this Chapter details the consultation context to the EIA that will accompany the MIC and TCPA applications for the Proposed Development (namely those assets that are within Isle of Man's territory and for which a Scoping Opinion is being sought) and not the Whole Project. Any assets associated with the Proposed Development that are outside of Isle of Man jurisdiction are shown in purple in Figure 6.1. These non-Manx components will be subject to separate consent application(s) made subject to legislative and policy relevant to the jurisdiction in which they are situated. Furthermore, the Operations and Maintenance facilities (shown in grey in Figure 6.1), will be the subject of a separate TCPA application in the Isle of Man.

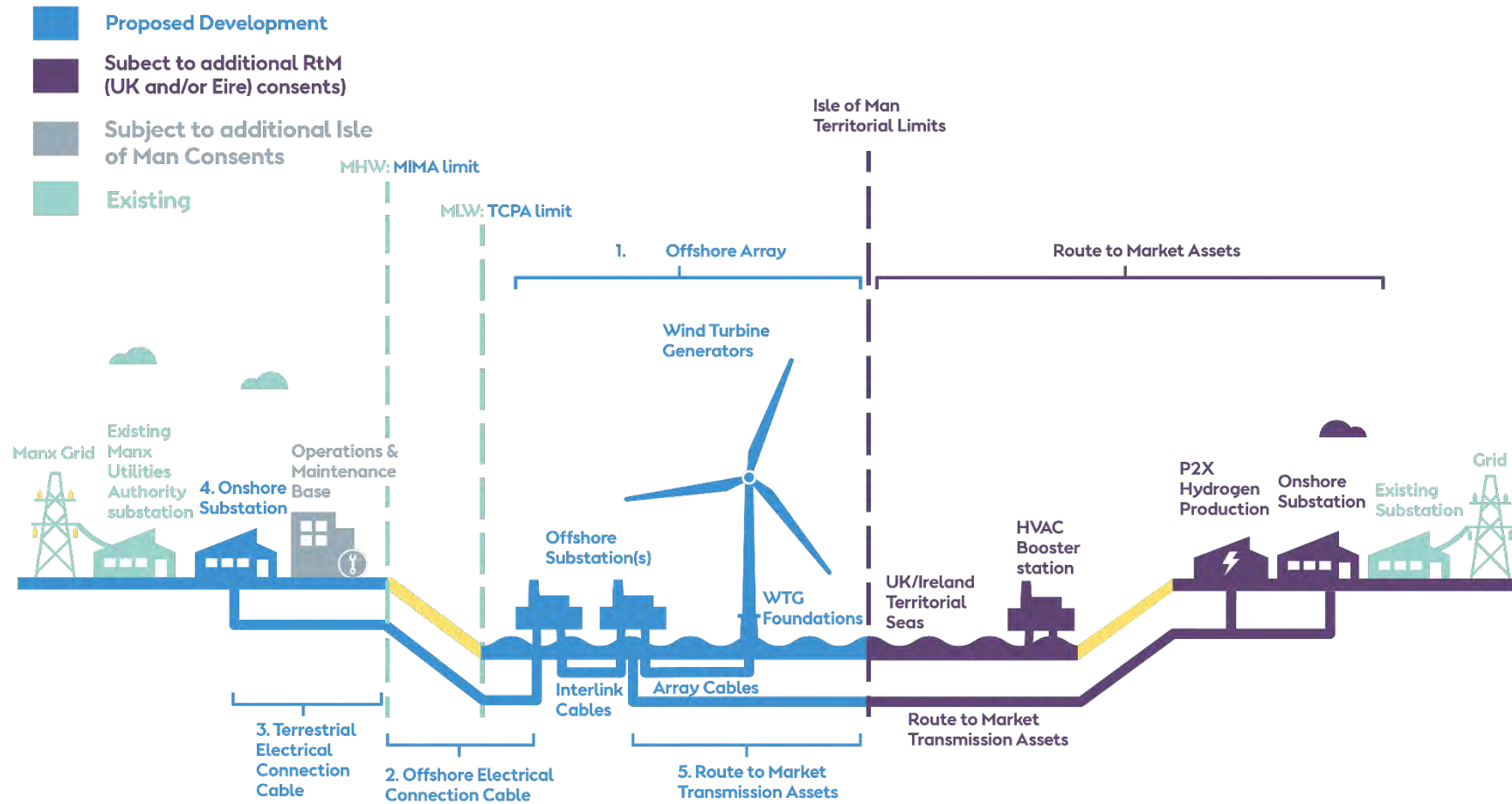


Figure 6.1: Moir Vannin Offshore Wind Farm (the 'Whole Project').

6.3 Marine Infrastructure Management Act (2016)

6.3.1.4 The following sections set out the consultation requirements as defined in Section 11 of MIMA (2016) and make reference to the timings in Section 10 of the Act.

6.3.2 Pre-application and public consultation

6.3.2.4 MIMA sets out two statutory requirements for consultation at the time, or within the period (presented in blue boxes below) specified in Section 10:

“Pre-Application Consultation must — (a) begin after the issue of the Scoping Opinion; and (b) allow at least 40 working days for responses.”

6.3.2.5 In the absence of secondary legislation, it is the Applicant’s inference that “pre-application consultation” shall include statutory and non-statutory consultation. This consultation would be concluded on “Consultation Materials”, the nature and form of which is yet to be determined. It is currently planned that pre-application consultation will take place in April and May 2024 (see CECAS Annex 6.A).

6.3.2.6 MIMA also sets out the requirement of the Applicant following the pre-application consultation phase to:

- Analyse responses received;
- Prepare a consultation report (as part of the MIC Application); and
- Publish the report.

“Public consultation must — (a) be opened as soon as reasonably practicable after notification of acceptance of application for examination; and (b) remain open for responses for a period of not less than 30 working days”

6.3.2.7 It is anticipated that public consultation will take place in Q1 2025, immediately after the submission and acceptance of the Application for examination and that it will be led by the Isle of Man Government.

6.3.2.8 The pre-application and public consultations will form a significant part of the public engagement on the Proposed Development. The occurrence of these consultations and engagements are presented graphically on a development timeline in Figure 6.2. However, the Applicant notes this may be subject to change and modification as Section 11 (3) of MIMA states;

6.3.2.9 The Department may make regulations about:

- (a) the procedure to be followed on pre-application consultation;
- (b) the form, content and publication of the consultation report.

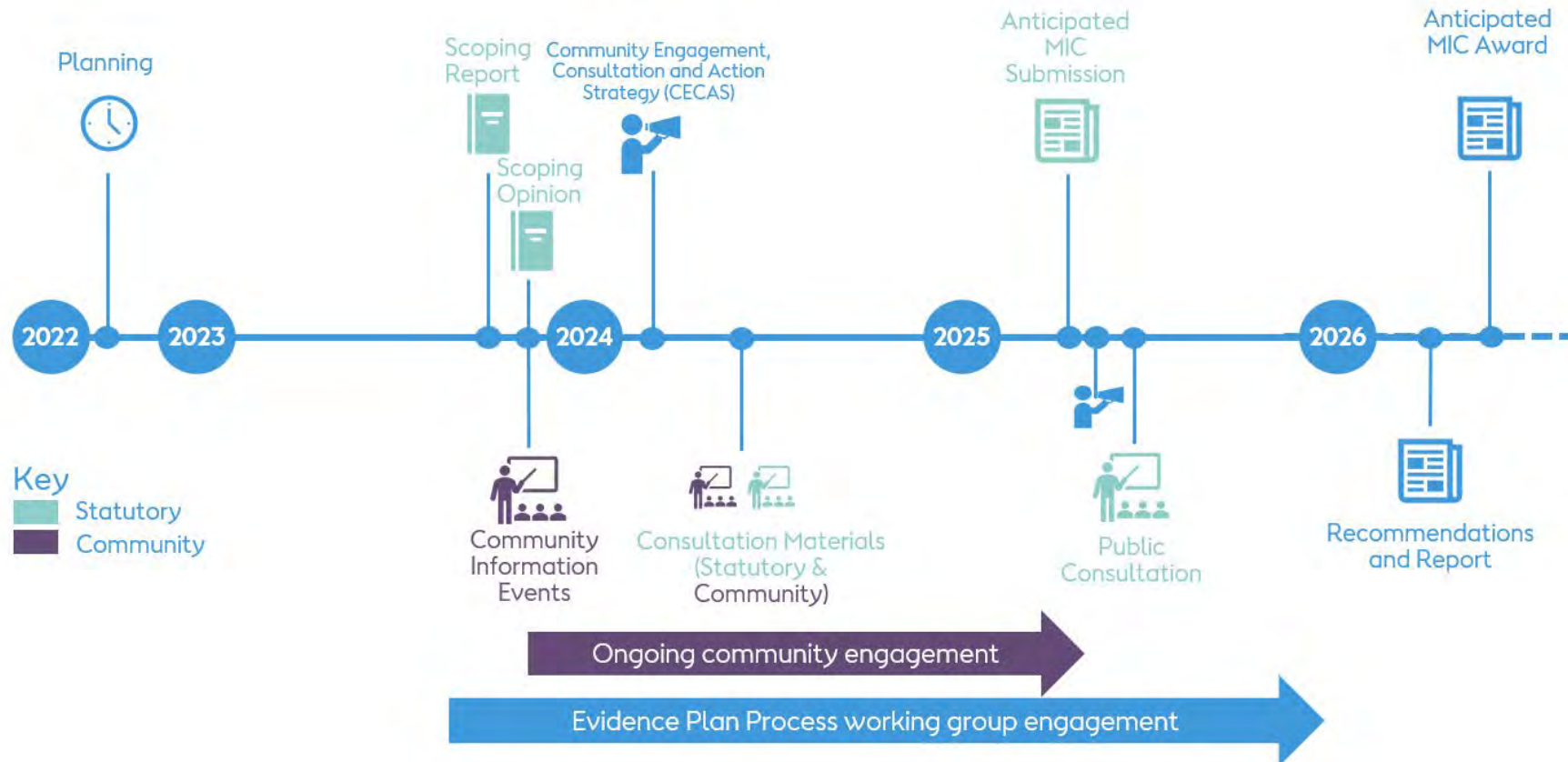


Figure 6.2: Timeline of pre-application and public consultations for the Proposed Development.

6.3.3 Consultation approach

6.3.3.4 The Applicant's general approach to consultation is:

- Structured around the statutory consultation requirements and timelines for application as set out in MIMA (see section 6.3);
- To engage with a wide range of stakeholders (see section 6.4 onwards) early on, including both statutory and non-statutory stakeholders, so that feedback can inform how the project develops, recognising all views and interests;
- To continue ongoing engagement with local communities throughout the project via a broad range of channels including information events and bilateral meetings as needed. The structure for this will be set out in the CECAS including how, where and when community consultation will take place; and
- To place consultation at the core of the EIA, through the Applicant's iterative Commit, Consult, Design ethos (as described in detail in section 5.4.3, Chapter 5, EIA Methodology and in section 2.2 of Annex 5.A). This ethos establishes pre-application consultation as a key part of the EIA process, helping to identify key issues that need addressing, scoping out others where it is agreed that they are not significant and establishing dialogue and agreements on specific methodologies for assessment and evidence bases.

6.4 Who we will engage with

6.4.1.4 The following sections detail who the Applicant will engage with during the pre-application phase of the project development.

6.4.2 Statutory stakeholders

6.4.2.4 Section 11 of MIMA (2016) requires that, before making an application, the applicant must consult:

- DoI;
- The Department of Environment, Food and Agriculture (DEFA);
- The Department of Economic Development; and
- 'Any other prescribed persons' (as prescribed by DoI).

6.4.2.5 To date, the DoI have also provided the Applicant with the following stakeholders they recommend be considered as priority consultees (treated as statutory by Applicant until secondary legislation is available):

- The Department for Enterprise;
- Territorial Sea Committee;
- Cabinet Office;
- Manx National Heritage;
- Manx Utilities and Manx Cable Company;
- Lease Holders;
- Local Commissioners and Douglas Borough Council;
- Isle of Man Steam Packet; and
- Transboundary consultees.

- 6.4.2.6 The Applicant has undertaken a Transboundary Screening (Annex 5.D) and Transboundary Protected Site Assessment (PSA) Screening Strategy (Annex 32.A) as part of this EIA Scoping Report.
- 6.4.2.7 Transboundary screening has been provided on a receptor-by-receptor basis, identifies where transboundary effects could occur and concludes by identifying the nation state(s) potentially affected. If transboundary effects are identified as having a likely significant effect, the Applicant anticipates that Dol will notify the governments of the potentially affected transboundary jurisdictions and incorporate any of their responses in the Scoping Opinion.
- 6.4.2.8 Following the receipt of a Scoping Opinion, the Applicant will engage with transboundary Statutory Nature Conservation Bodies (SNCBs) as identified in section 6.4 and the nation states identified in Table 1.2 of Annex 5.D.
- 6.4.2.9 The Transboundary PSA Screening Strategy (Annex 32.A) considers all protected wildlife sites outside of the Isle of Man jurisdiction. The Annex provides a transboundary screening assessment for such sites (for Appropriate Assessment (AA) and MCZ assessment) and is informed by identification of relevant features/ species, as well as consideration of their seasonality and origin (site screening) and concludes with a summary of the screening conclusions.
- 6.4.2.10 The intention of this document is that it will be provided to transboundary consultees, including the relevant SNCBs within the relevant neighbouring jurisdictions to the Isle of Man, to enable them to provide meaningful comment in any response to transboundary consultation initiated by the Isle of Man Government. These will principally be the SNCBs for England, Wales, Scotland, Northern Ireland and Eire.
- 6.4.2.11 To date no engagement or consultation has been held with any stakeholders in relation to this transboundary site screening exercise. It is anticipated that the relevant identified SNCBs will be provided this document for the purposes of transboundary consultation as part of the process of seeking a Scoping Opinion from the Dol. Following the receipt of a Scoping Opinion, the Applicant will engage with transboundary SNCBs as required.

6.4.3 Non-statutory Stakeholders

- 6.4.3.4 A further stakeholder identification exercise is being undertaken by a local agency to identify a full list of stakeholders to work with during the pre-examination stage. The Applicant understands the uniqueness in the multiple and differing roles individuals may have across multiple stakeholder groups on the Island, and using a local agency will help the Applicant to make sure this activity is fully comprehensive.
- 6.4.3.5 Table 6.1 below includes those non-statutory stakeholders that have already been identified by our mapping exercise. This list will be updated as additional stakeholders are made known to the Applicant through the consultation process.

Table 6.1: Identified non-statutory stakeholders.

Topic	Consultees
Ecology	Manx Wildlife Trust
	Manx Birdlife
	Manx Ornithological Society
	Manx Whale and Dolphin Watch
	Manx Basking Shark Watch
	Manx Nature Conservation Forum

Topic	Consultees
Fisheries	Marine Conservation Society
	Manx Fish Producers Organisation
	Community Inshore Fisheries Alliance (CIFA)
	Regional Inshore Fisheries Group (RIFG)
	Isle of Man Angling Federation Isle of Man Angling Association
Shipping and Navigation	Laxey Towing Company
	Mezeron
	StenaLine
	Seatruck
	Isle of Man Charter Skippers Association
Socio-economic, tourism and recreation	Isle of Man Yacht Club
	Manx Sailing and Cruising Club
	Royal Yachting Association
	Tour Operators
	Douglas Bay Yacht Club
	Discover Diving
	Isle of Man Sub Aqua Club

6.4.4 Local community

- 6.4.4.4 The Community Engagement, Consultation and Action Strategy (CECAS) sets out how the Applicant will consult with the local community during the development of the Proposed Development. It explains the opportunities for the local community and interested stakeholders to come and meet the Applicant and members of the development team, including the EIA Consultants (see Table 1.1 in Chapter 1, Introduction), to ask questions and to comment on the Applicant’s plans. The CECAS is provided in Annex 6.A.
- 6.4.4.5 The Applicant is seeking the Scoping Opinion to include commentary and recommendations on the CECAS. Upon receipt of the Scoping Opinion, the CECAS will be updated and published in January 2024 and will be made available publicly, through the Applicant’s website.
- 6.4.4.6 The timeline for the local community engagement is presented relative to all consultation activities identified in Figure 6.2.

6.5 How we will engage

- 6.5.1.4 The following sections detail the range of approaches the Applicant will utilise to engage with all stakeholders during the pre-application phase of project development.

6.5.2 Evidence Plan Process

- 6.5.2.4 The Applicant has developed an Evidence Plan Process (EPP) and consulted on a draft version of an EPP Terms of Reference (ToR) with DoI, DEFA and the Department for Enterprise (DfE). The EPP will be developed by the Applicant as a tool for agreeing the information that the Applicant will supply to DoI and DEFA and for a MIC and Planning Permission (TCPA).

- 6.5.2.5 The EPP will establish an Oversight Group and seven Technical Advisory Groups (TAGs) on the topics outlined in Figure 6.3 (three onshore groups, three offshore groups and one overarching group (Biodiversity TAG)). These ToR associated Technical Advisory Groups (TAGs) and Oversight Group relate to the applications for consent and therefore cover the aspects of the Proposed Development (see section 6.2) that occur in the Isle of Man and within the Isle of Man Territorial Seas only.
- 6.5.2.6 The primary aim of the EPP is to seek agreement with key stakeholders on the data and information to be included in the Environmental Statement to support the applications. The EPP seeks to gain consensus between all parties on the amount and range of evidence required to be collected, and to address and agree issues early in the application process and as the application evolves. The EPP aims to make discussions more structured and efficient, allowing key environmental and consenting issues to be identified between interested parties prior to submission of the application.

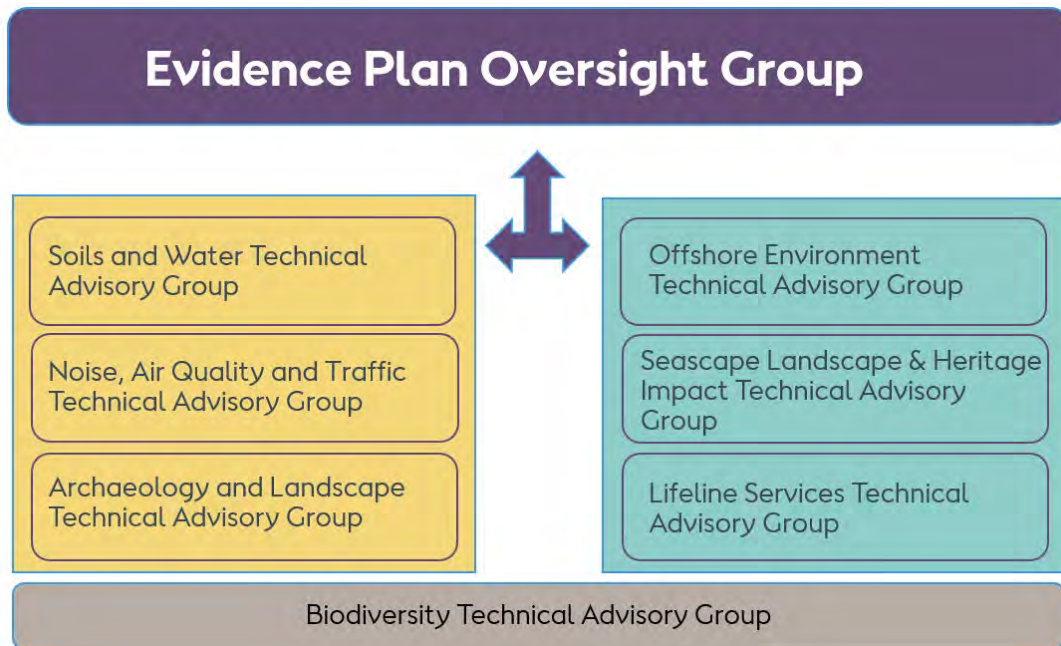


Figure 6.3: Evidence Plan Oversight and Advisory Groups.

- 6.5.2.7 The EPP will incorporate certain EIA matters as well as Protected Sites Assessment (PSA) matters. The EPP incorporates matters relevant to the Wildlife Act 1990 in the Isle of Man under the Biodiversity TAG. It will seek to ensure that sufficient information is provided to support the PSA that will accompany the MIC application.
- 6.5.2.8 The Biodiveristy TAG will also progress discussions on the Applicant’s biodiversity ambition. As part of Ørsted’s new 2030 strategy that significantly increases build-out of renewable energy capacity, the company has set the ambition to deliver biodiveristy net positive impact (NPI) in all renewable energy projects it commissions from 2030, strengthening the green energy build-out in balance with nature.
- 6.5.2.9 The timeline for the EPP is presented relative to all consultation activities identified in Figure 6.2.

6.6 Consultation and engagement to date

- 6.6.1.4 Table 6.2 summarises the consultation undertaken with the Isle of Man Government and its respective departments by the Applicant in relation to EIA and Consents, in the pre-application phase from March 2023 to the submission of this report.

Table 6.2 Engagement taken place between March and September 2023.

Dates of Communication	Type of Communication	Organisation(s)	Purpose
<i>Meetings and Presentations</i>			
Sept 22 – present (ongoing)	Regular meetings (F2F & virtual)	Dol	Meetings to discuss project updates, EIA strategy and the approach to the Scoping Report.
20-Oct-22	Meeting (Virtual)	bp (Morgan and Mona Projects)	Initial meeting Confirmation that the Isle of Man is progressing concerns around shipping and nav routes
Nov-22 – present (ongoing)	Monthly meetings (F2F & virtual)	DEFA	Monthly meetings to discuss project updates, planned surveys, fisheries strategy, HRA/PSA and general queries
01-Dec-22	Meeting (blended)	Dol DEFA Cabinet Office Department of Enterprise Attorney General Chambers	Workshop on MIMA consent process and resource requirements. High level overview of resource requirements for heads of departments.
01-Dec-22	Meeting (blended)	Airport Dept. Climate Change Manx Heritage Harbours Attorney General Chambers DEFA Manx Utilities Development Management Team	Workshop on MIMA consent process and resource requirements. Focus on engagement and timeframes for teams delivering work.
31-Jan-23	Meeting (F2F)	Manx Wildlife Trust	Introduction meeting and present the biodiversity strategy
17-Feb-23	Meeting (blended)	StenaLine	Introduction to project and discussion on ongoing engagement
28-Mar-23	Meeting	Steam Packet	Update Steam Packet on project development and mitigation / protection of lifeline routes.
25-May-23	Meeting	Airport	Initial meeting and discussion on engagement and working group formation
30-May-23	Virtual Meeting	bp (Morgan and Mona Projects)	Project update meeting to share project details and seek areas of alignment.
15-Jun-23	Virtual Meeting	Mezeron WS	Introduction to project and discussion on ongoing engagement

Dates of Communication	Type of Communication	Organisation(s)	Purpose
17-Jul-23	Virtual Meeting	Northern Lighthouse Board	Introductory Meeting
20-Jul-23	Meeting	Manx National Heritage	Introductory Meeting
26-Jul-23	Virtual Meeting	Natural England	Project Update and RtM Options
27-Jul-23	Virtual Meeting	Chamber of Shipping	Introductory meeting
14-Aug-23	Meeting	MFPO	Introductory meeting
15 – 17 Aug 23	Roadshow	DOI, DEFA, Manx National Heritage, DfE, Manx Utilities, Isle of Man Airport,	Proportionate EIA and Scoping Roadshow with workshops on the project's strategy.
September	Virtual Meeting	Natural England	Net Gain and Biodiversity
4-Sept-23 – present (ongoing)	Virtual Meeting	Dol	Catch up meetings to discuss ongoing actions, 3 times a week, ongoing.
<i>Position Papers and Documents</i>			
25 January 23	Document	Defa	Draft Commercial Fisheries Strategy
23 February 23	Document	Dol, DEFA	Draft Habitats Regulation Assessment (HRA) Position Paper
22 March 2023	Document	Dol, DEFA	Proportionate EIA Position Paper
29 August 23	Document	Defa	Benthic Ecology Survey Strategy
28 July 2023	Document	Dol, Manx Utilities	EIA Scoping Strategy
28 July 2023	Document	Dol	Evidence Plan Terms of Reference
28 July 2023	Document	Dol	Evidence Plan Engagement Plan
13 September 2023	Document	Dol	Stakeholder Engagement Strategy

6.7 Questions to Consultees

- Question 6.1: Do you agree with the Applicant's approach to consultation?
- Question 6.2: Are there any other stakeholder groups you wish the Applicant to engage with beyond those set out in this Chapter?



Moor Vannin Offshore Wind Farm Scoping Report

Volume 2: Offshore Chapters

7 Marine Geology, Oceanography & Physical Processes

7.1 Introduction

7.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to marine geology, oceanography and physical processes from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on marine geology, oceanography and physical processes receptors.

7.1.1.2 For the purposes of both this Scoping Report and the subsequent ES, marine geology, oceanography and physical processes, hereafter referred to as 'marine processes' for ease of reading, includes the following marine elements up to MHW:

- Marine Geology, including bathymetry, geology, surficial sediments and seabed form;
- Oceanography, including tidal and non-tidal influences, waves, and stratification; and
- Physical Processes, including sediment transport and suspended sediments.

7.1.1.3 Marine processes pathways are closely linked to physical and biological seabed and coastal receptors, as well as water quality, and as such, this Chapter should be read alongside the following Chapters as it describes the pathways that inform the assessment of the effects on receptors identified within these other topic Chapters:

- Chapter 8, Marine Water & Sediment Quality, which uses marine processes pathways to inform the assessment of impacts on marine water and sediment quality receptors;
- Chapter 10, Benthic Subtidal & Intertidal Ecology, which uses marine processes pathways to inform the assessment of impacts on benthic subtidal and intertidal receptors.;
- Chapter 12, Fish & Shellfish Ecology, which uses marine processes pathways to inform the assessment of fish and shellfish receptors; and
- Chapter 16, Offshore Archaeology & Cultural Heritage, which uses marine processes pathways to inform the assessment of impacts on offshore archaeology and cultural heritage receptors.

7.2 Legislation, policy and guidance

7.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:

- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
- Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.

7.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed

Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 7.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to marine processes. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 7.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 7.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

7.2.2 Legislation

National legislation

- The Submarine Cables Act 2003.

International legislation and agreements

- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, in addition to The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (collectively referred to as 'The EIA Regulations').

7.2.3 Policy

National policy

- National Strategy on Sea Defences, Flooding and Coastal Erosion (Isle of Man Government, 2016);
- The Isle of Man Strategic Plan 2016, including:
 - Environment Policy 4;
 - Environment Policy 5;
 - Environment Policy 9;
 - Environment Policy 11;
 - Environment Policy 24;
 - Energy Policy 1; and
 - Energy Policy 4.

International policy

- The Overarching NPS for Energy (NPS EN-1; Department for Energy and Climate Change (DECC), 2011a) and the draft revised NPS EN-1 (Department for Energy Security and Net Zero (DESNZ), 2023a);
- The NPS for Renewable Energy Infrastructure (NPS EN-3; DECC, 2011b) and the draft revised NPS EN-3 (DESNZ, 2023b); and
- The NPS for Electricity Networks Infrastructure (NPS EN-5; DECC, 2011c) and the draft revised NPS EN-5 (DESNZ, 2023c).

7.2.4 Guidance

International guidance

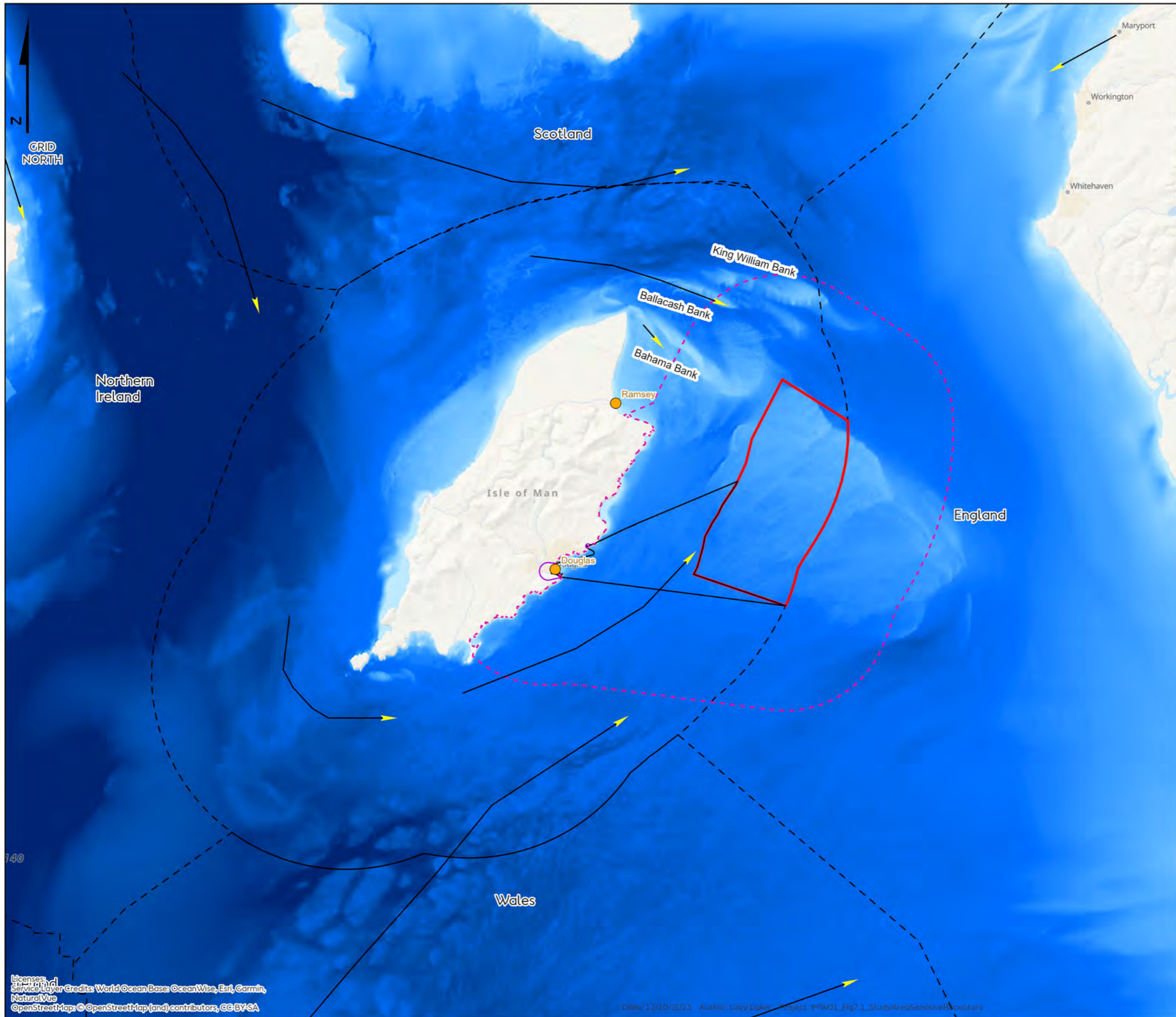
- Assessment of the Environmental Impacts of Cables (OSPAR 2009).

7.3 Study Area

7.3.1.4 As presented in Figure 7.1, the marine processes Study Area is defined as the:

- Near-field, which includes the:
 - Offshore Array Area;
 - Offshore Electrical Connection Search Area;
 - Proposed landfall areas; and
- Far-field, which includes the:
 - Coastal and seabed areas outside the near-field areas, but within the vicinity of the Proposed Development that may be influenced by marine processes.

7.3.1.5 The marine processes Study Area will be further refined during the EIA process with consideration to the tidal excursions and specifically sediment plume pathways to allow a definition of the Zone of Influence (Zoi).



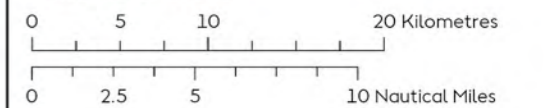
Moor Vannin

Figure 7.1
Marine Geology, Oceanography and
Physical Processes Study Area and
Sensitive Receptors

- Coastal Locations
 - Jurisdictional Boundaries
 - Sand Transport Pathways
 - Marine Processes Study Area
- Scoping Boundary**
- Offshore Electrical Connection Search Area
 - Terrestrial Electrical Connection Search Area
 - Offshore Array
- Bathymetry (EMODnet 2020)**
- 162.21 (m)
 - 257.8 (m)



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:430,000



REV	REMARK	DATE
	First issue	13/10/2023

Title: Study Area & Sensitive Receptors
Document no: IMW01_Fig7.1
Created by: GB
Checked by: AK
Approved by: SB



7.4 Baseline

7.4.1 Overview of baseline

- 7.4.1.4 An understanding of the baseline marine processes which control the features, pathways and receptors within the Study Area has been derived from the available data sources and literature, presented in Table 7.1. The characterization of the baseline will be further developed following completion of project-specific surveys and will be updated in future phases of the EIA process.

Marine Geology

- 7.4.1.5 Across the Offshore Array area, water depths range between, approximately 10 and 37 m (LAT), as shown on Figure 7.1, with water depths increasing to the south. Water depths within the Offshore Electrical Connection Search Area generally range between 25 and 30 m (LAT), before shallowing consistently and relatively steeply towards the coast from around 30 m (LAT), approximately 3 km offshore.
- 7.4.1.6 Surficial sediments within the Offshore Array area typically comprise sands and gravelly sands, with increasing mud content towards the north-east of the Offshore Array area, towards the Eastern Irish Sea Mudbelt. The seabed within the Offshore Electrical Connection Search Area is primarily characterised by sandy gravel, with some exposed rock outcrops close to the coast, including offshore of Douglas (British Geological Survey (BGS), 2020).
- 7.4.1.7 To the northeast of the Isle of Man are a series of banner banks associated with enhanced tidal flow past the northern headland, creating circulatory currents that cause sediment transport pathways to converge. The Offshore Array is located across a low sandbank (approximately -12 m (LAT)) extending over 40 km to the southeast of the Bahama Bank (Figure 7.1) with areas of sandwaves to the north and south (DECC, 2005).
- 7.4.1.8 The eastern coastline of the Isle of Man is predominantly cliffed, although a sand-fronted bay is present at Douglas. North of Ramsey the coastline is low-lying, formed of glacial sands and gravels with till and raised beach deposits, which is subject to more rapid erosional processes than the rocky cliffs present elsewhere (Barne *et al.*, 1996; Kennington and Hiscott, 2018).
- 7.4.1.9 Regional scale assessments suggest that bedload sediment transport converges in the approximate site of the Offshore Array, with sediment transported towards the east, clockwise around the northern headlands and anti-clockwise round the southern (Holmes and Tappin, 2005; Mellet *et al.*, 2015) (Figure 7.1). Regional syntheses indicate that over longer timescales the banner banks are leaking sand towards the open shelf and as such should be regarded as temporary sinks for sand captured around the northern tip of the Isle of Man (Holmes and Tappin, 2005; Kennington and Hiscott, 2018).
- 7.4.1.10 Suspended Particulate Matter (SPM) provides an indication of turbidity and is highly variable according to water depth and the hydrodynamics in the area (i.e., tide, current and wind regimes). Average SPM concentrations between 1998-2015 identified from Cefas (2016) are typically low in the array area, at approximately 3 mg/l, although near-bed SPM levels may be significantly elevated during storm events.

Oceanography

- 7.4.1.11 Modelled mean spring and neap tidal ranges across the array area are 6.0 and 3.2 m, respectively, with values increasing to the east towards the coast of the UK (ABPmer

et al., 2008). The tidal range measured at Port Erin¹ is 4.9 m for springs and 2.7 m for neaps. Data supplied by the Proudman Oceanographic Laboratory indicates a tidal range at Douglas of 6.1 m for springs and 3.2 m for neaps (Kennington and Hiscott, 2018). Strong currents exist around the northern and southern headlands, whereas between the Isle of Man and the Cumbrian coast, current speeds are more benign as a result of two tidal waves meeting (Howarth, 2005; Kennington and Hiscott, 2018). Within the Offshore Array, tidal current speeds are generally low, with mean spring peak flow measuring between approximately 0.5 and 0.9 m/s, with speeds up to 1.1 m/s within the Electrical Connection Search Area (ABPmer et al., 2008). The Study Area may also be influenced by non-tidal residual circulation patterns, which in the Irish Sea are complex, with surface and bottom currents often flowing in different directions (Kennington and Hiscott, 2018).

- 7.4.1.12 Mean annual significant wave heights² within the Offshore Array are approximately 1.2 m, reaching up to 1.5 m in the winter months and tending to increase towards the south-west, closer to the centre of the Irish Sea (ABPmer et al., 2008). Waves originate primarily from the south-west across the Offshore Array area and a majority of the Offshore Electrical Connection Search Area, apart from close to the coast, where the southern component becomes dominant (ABPmer, 2018).
- 7.4.1.13 Haline stratification is present in the eastern Irish Sea, caused by differences between saline oceanic inflows and freshwater inputs from the coast. The resulting density flows are strongest in winter and spring but can be overwhelmed during periods of strong winds. This haline stratification is reinforced in the summer by thermal stratification in areas of weak tidal currents, although to the east of the Isle of Man the necessary conditions are only marginal, and stratification can be easily dissipated by storms or spring tides (Howarth, 2005; Department for Business, Energy & Industrial Strategy (BEIS), 2022b). According to water column classification provided in Vincent et al. (2004), the Offshore Array is located within mixed waters, with a permanent front feature located approximately 10 km to the southeast.

Table 7.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
<i>Morphological Evidence</i>		
BGS Offshore GeolIndex Map (BGS, 2020)	Seabed sediment maps (with a 16-class Folk classification) and borehole records from point locations. Data gaps exist in the coastal zone.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)
European Marine Observation and Data Network (EMODnet) Bathymetry, Geology, and Surficial Sediment Data (EMODnet, 2020)	Interactive map with bathymetry, geology, and sediment layers available for download.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)
Project-specific geophysical and benthic surveys (not yet available)	Geophysical survey data and benthic sediment grab samples (including Particle	Full coverage (Offshore Array and

¹ Part of the UK National Tide Gauge Network, owned and operated by the Environment Agency, which records tidal elevations at 44 locations around the coast of the UK. Data from this network has the highest data confidence for tidal levels around the UK.

² Defined as the mean of the highest one third (33%) of waves (measured from trough to crest) occurring within a year.

Source	Summary	Coverage of the Study Area
	Size Analysis (PSA) at locations within the proposed lease area.	Offshore Electrical Connection Search Area)
JNCC Coastal Directory Series Regional Report 13 – Northern Irish Sea: Colwyn Bay to Stranraer, including the Isle of Man (Barne <i>et al.</i> , 1996)	Regional characterisation of geology, morphology, coastal processes and form.	Partial coverage
Department of Trade and Industry (DTI) Strategic Environmental Assessment Area 6 (SEA6), Irish Sea, Seabed and Surficial Geology and Processes Report (Holmes and Tappin, 2005)	Regional characterisation of geology, morphology, surficial sediments and sediment transport, including geophysical survey outputs.	Partial coverage
DTI Technical Report: Sandbanks, sand transport and offshore windfarms (Kenyon and Cooper, 2005)	Detail on offshore and littoral sediment transport, including morphological form and behaviour of offshore sandbanks.	Partial coverage
BGS Commissioned Report CR/15/057 – Geology of the seabed and shallow subsurface: The Irish Sea (Mellet <i>et al.</i> , 2015)	Regional characterisation of geology, morphology, surficial sediments and sediment transport.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)
<i>Hydrodynamic Evidence</i>		
Atlas of UK Marine Renewable Energy Resources (ABPmer <i>et al.</i> , 2008)	Low resolution modelled hindcast wave, wind and hydrodynamic data. Summary data provided only.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)
SEASTATES Metocean Data and Statistics Interactive Map (ABPmer, 2018)	Modelled hindcast wave and hydrodynamic data.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)
Cefas Suspended Sediment Climatologies around the UK (Cefas, 2016)	Monthly and seasonal Suspended Particulate Matter (SPM) maps.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)
Cefas WaveNet data (Cefas, 2023)	Wave records from point locations, including Liverpool Bay.	Partial coverage
National Tide and Sea Level Facility (NTSLF)	Tide gauge records from point locations, including Port Erin and Heysham.	Partial coverage
DTI SEA6 Technical Report: Hydrography of the Irish Sea (Howarth, 2005)	Regional characterisation of wave, wind, and hydrodynamic regimes.	Full coverage (Offshore Array and Offshore Electrical Connection Search Area)

Source	Summary	Coverage of the Study Area
<i>Future Changes</i>		
Coastal Futures Interactive Map (IHE Delft, 2021)	Sea level rise predictions for coastal locations.	Partial coverage
UK FUTURECOAST Project (Defra, 2002)	Sea level rise predictions for coastal locations and assessments of shoreline behaviour.	Partial coverage
Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report: Impacts, Adaption and Vulnerability	Predictions of future changes as a result of climate change, including sea level rise predictions for coastal locations and modifications to hydrodynamic regimes.	Partial coverage
UK Climate Projections Science Report (UKCP18) Marine Report (Palmer <i>et al</i> , 2018)	Sea level rise predictions for coastal locations.	Partial coverage
<i>General</i>		
Marine and Coastal Processes Environmental Statement, technical reports and associated survey results for existing or proposed windfarms in the public domain: Barrow, Walney, West of Duddon Sands, Ormonde, Celtic Array (unsuccessful), Morgan, Mona, and Morecambe.	Baseline physical process (hydrodynamic, morphological, and coastal) conditions of relevance to the respective windfarms, along with survey data (where available) from geophysical and benthic surveys and metocean deployments.	Partial coverage
Offshore Energy Strategic Assessment 4 (OESEA4) (Department for Business, Energy and Industrial Strategy (BEIS), 2022)	Regional characterisation of geology, morphology, surficial sediments, coastal processes, and hydrodynamics.	Partial coverage
Manx Marine Environmental Assessment (MMEA) Documents, including Chapter 2: Hydrology, Weather and Climate, Climatology (Kennington and Hiscott, 2018)	Regional characterisation of morphology, sediment transport, coastal processes, and hydrodynamics.	Partial coverage

7.4.2 Summary of key receptors

7.4.2.4 The key marine processes receptors within the Study Area are shown on Figure 7.1 and identified as follows:

- Seabed features, including Bahama Bank and the associated sandbank; and
- The coastline, including the wider coast (the eastern Isle of Man) and the coast at the proposed landfall.

7.4.2.5 Secondary and indirect impacts from marine processes pathways on other (biological) receptors are identified within the following chapters of the Scoping Report:

- Chapter 8, Marine Water & Sediment Quality;
- Chapter 10, Benthic, Subtidal, & Intertidal Ecology;
- Chapter 11, Marine Mammals & Megafauna;

- Chapter 12, Fish & Shellfish Ecology;
- Chapter 13, Commercial Fisheries; and
- Chapter 32, Protected Sites Assessment Strategy.

7.4.3 Further data collection to be undertaken

7.4.3.4 As further discussed within paragraph 7.7.3.5, a thorough, desk-based review of the relevant data will be undertaken to inform the subsequent EIA, building upon the high-level outline provided within this Chapter of the Scoping Report. Project-specific survey outputs will be used to enhance the understanding of the baseline conditions. These will include the following across the Offshore Array and Electrical Connection Search Area:

- The deployment of a wave buoy within the Offshore Array, to collect metocean data for 12 months which commenced in September 2023;
- Benthic surveys – planned to commence in September 2023, will gather information about the physical and chemical nature of seabed sediments across the Offshore Array and Electrical Connection Search Area; and
- Geophysical surveys – planned to commence in Spring/ Summer 2024.

7.4.4 Future baseline

7.4.4.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

7.4.4.5 A consideration of the future baseline, including the associated variation, is provided in the context of the operating lifetime of the Proposed Development. For the current purposes of this Scoping Report, the Representative Concentration Pathway (RCP) 8.5 (high-emissions) scenario (Palmer *et al.*, 2018) has been presented in order to illustrate climatic changes that are predicted beyond any influences of the Proposed Development.

7.4.4.6 UKCP18 suggests an increase in Mean Sea Level (MSL) of 0.55 to 0.65 m at 2100 along the coast of the Isle of Man (Palmer *et al.*, 2018). Future changes in storm surges have been predicted to be indistinguishable from background variation (Lowe *et al.*, 2009), although extreme surge level event frequency is likely to increase (IPCC, 2021). A projected decrease in mean significant wave height of between approximately 5 to 10% has been detected within the Irish Sea, although predictions from different wave models tend to diverge in semi-enclosed seas (Bricheno and Wolf, 2018; Palmer *et al.*, 2018).

7.4.4.7 In addition, the British Isles is affected by isostatic readjustment, a regional change in land surface elevation following the removal of the weight of the British-Irish Ice Sheet. Due to this post-glacial uplift the sea in the Isle of Man region is estimated to change by approximately -0.6 to -0.9 mm/year (Palmer *et al.*, 2018), although this is outpaced by rates of global sea level rise (BEIS, 2022a).

7.5 Identification of impacts and effects

7.5.1 Key parameters for assessment

7.5.1.4 The marine processes scoping is based on a consideration of the construction, operation and maintenance and decommissioning of the following project infrastructure:

- A maximum of 100 Wind Turbine Generators (WTGs) with Gravity Base foundations, and a maximum of five Offshore Substations with Gravity Base foundations (a maximum of 105 positions);
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection; and
- Landfall infrastructure within the intertidal, installed using open-cut trenching.

7.5.1.5 The MDS to be assessed in the EIA is defined for each impact from the parameters within the overall Design Envelope. Defining the MDS for some processes, for example sediment disturbance activities, can be complex and will be informed by the numerical modelling approach (outlined further in section 7.7.3). The MDS for other impact pathways will be defined by a combination of construction methods, structure sizes and quantities, and the intensity of certain activities.

7.5.2 Commitments

7.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to marine processes are described in Table 7.2 below.

Table 7.2: Relevant commitments to marine geology, oceanography and physical processes.

ID	Measure proposed	How this measure will be secured	Rationale
Co2	Development of, and adherence to, an Asset Installation & Protection Plan (AIPP) detailing the quantities and installation methods for subsea infrastructure, informed by the Cable Burial Risk Assessment.	MIC condition.	To inform judgements on required cable burial depth, ensuring cable burial where possible while limiting the potential for cable exposure and minimising the amount of seabed disturbance required, and also reducing the need for remedial works, re-burial and additional protection, all of which will limit impacts on marine geology, oceanography and physical processes receptors.
Co3	Cable burial will be the preferred method of cable protection, however where burial is not possible, requirements for additional cable protection will be determined through	MIC condition.	Cable burial as the preferred option for cable protection will minimise the requirement for surface-laid cable protection, and therefore reduce the impact of the introduction of hard substrate. The Cable Burial Risk Assessment (CBRA) will be used to make informed

ID	Measure proposed	How this measure will be secured	Rationale
	consultation with the relevant stakeholder.		judgements about cable burial depths to ensure the cable remains buried while limiting the amount of seabed disturbance required, and also reducing the need for remedial works, re-burial and additional protection, all of which will limit impacts on marine geology, oceanography and physical processes receptors.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	The information contained within the Decommissioning Programme will confirm the final decommissioning methods, to be agreed with relevant stakeholders, for example whether cables will be removed or left <i>in situ</i> .

7.5.3 Approach to assessment of likely significant effects

7.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on marine processes at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

7.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

7.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 7.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on marine processes based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified marine processes lead.

7.6 Proposed approach to the EIA

7.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on marine processes associated with the Proposed Development that have (or do not have) the potential to result in LSE.

7.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with

key stakeholders). The proposed approach to these impacts is described further within section 7.7.2; and

- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 7.7.3.

7.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

7.6.1.7 For marine processes, the assessment of impacts will also follow specific guidance. This is further detailed within section 7.7.3 below.

7.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

7.7 Post-scoping

7.7.1 Overview

7.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For marine processes, the scoping study has identified:

- Twelve impacts which have the potential to result in No LSE.

7.7.2 No LSE and next steps

7.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process in the form of a note detailing the marine processes pathways that are closely linked to physical and biological seabed and coastal receptors, providing a summary of the literature and evidence to date, alongside examples from other projects. It is anticipated that this note will be provided to the Physical Subgroup of the Offshore Environment Technical Advisory Group (TAG) during Q4 2023.

7.7.3 LSE and next steps

7.7.3.4 No impacts for marine processes have been identified as having the potential for LSE at this stage. All the following studies will support the assessments in which impacts arise through a marine processes pathway resulting in effects on other receptor groups (e.g., benthic ecology, fish and shellfish ecology).

Supporting studies

7.7.3.5 A technical report will be prepared to provide a detailed baseline description of marine geology, oceanography and physical processes in relation to the Proposed Development. This report will be provided to the Physical Subgroup of the Offshore Environment Technical Advisory Group (TAG) as part of the Evidence Plan Process, following submission of the Scoping Report.

7.7.3.6 This baseline description will set out the 'conceptual understanding' of the marine and coastal system in which the Proposed Development is located and will describe how

the processes operating within this system link together and evolve in response to applied natural and anthropogenic forces. This understanding will underpin the assessments of potential impacts arising from the Proposed Development.

- 7.7.3.7 A numerical model will be developed to factor in the project-specific surveys, metocean data collection and a range of representative baseline conditions. This will involve a validated hydrodynamic model that will be used to drive any sediment plume scenarios defined following scoping.
- 7.7.3.8 The model will be applied to investigate the source-pathway-receptor relationship for several of those issues where there is potential for LSE, based on the realistic MDS, as provided in Chapter 5, EIA Methodology, and outlined here in section 7.5.1.
- 7.7.3.9 Numerical model outputs will be supplemented with the evidence base, using existing studies from comparable projects. Details of the numerical modelling methodology, including parameters, data sources, and calibration/ validation details will be provided as part of the Evidence Plan Process.

Assessment Methodology

- 7.7.3.10 The EIA will assess the potential impacts on marine processes identified in the Impacts Register (Annex 5.B).
- 7.7.3.11 In addition to this general approach, the assessment of impacts on marine processes will also follow the following guidance documents where they are specific to this topic:
- EIA for offshore renewable energy projects (British Standards Institution (BSI), 2015);
 - Coastal Process Modelling for Offshore Wind Farm EIA; Best Practice Guide (Lambkin *et al.*, 2009);
 - Guidelines in the use of metocean data through the lifecycle of a marine renewable development (Cooper *et al.*, 2008);
 - Guidelines for Data Acquisition to Support Marine Environmental Assessments of Offshore Renewable Energy Projects (Cefas, 2011);
 - Marine Scotland Consenting and Licensing Guidance for Offshore Wind, Wave and Tidal Energy Applications (MS-LOT, 2018);
 - National Resources Wales (NRW) Monitoring Evidence Report No: 243 Guidance on Best Practice for Marine and Coastal Physical Processes Baseline Survey and Monitoring Requirements to inform EIA of Major Development Projects (Brooks *et al.*, 2018);
 - Review of Cabling Techniques and Environmental Effects applicable to the Offshore Wind farm Industry. Department for Business Enterprise and Regulatory Reform (BERR)in association with Defra (BERR, 2008);
 - Offshore Windfarms: Guidance note for EIA in Respect of Food and Environmental Protection Act 1985 (FEPA) and Coast Protection Act 1949 (CPA) requirements (Cefas, 2004);
 - Review of environmental data associated with post-consent monitoring of licence conditions of offshore wind farms. Marine Management Organisation (MMO) Project No: 1031 (Fugro-Emu, 2014);

- Offshore wind cabling: ten years' experience and recommendations (Natural England, 2018);
- Best Practice Advice for Evidence and Data Standards for offshore renewables projects (Natural England, 2022);
- Further review of sediment monitoring data (Collaborative Offshore Windfarm Research Into the Environment (COWRIE) ScourSed-09) (ABPmer *et al.*, 2010);
- Review of Round 1 Sediment process monitoring data – lessons learnt (Sed01) (ABPmer *et al.*, 2007);
- Dynamics of scour pits and scour protection – Synthesis report and recommendations (Sed02) (HR Wallingford *et al.*, 2007); and
- Potential effects of offshore wind developments on coastal processes (ABPmer and METOC, 2002).

7.7.3.12 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

7.7.3.13 For marine processes, impact magnitude will be determined by a qualitative assessment based on a semantic scale, defined by a combination of permanence of change and spatial extent.

7.7.3.14 The sensitivity of marine processes receptors will be determined by both their capacity to accommodate change in addition to their rarity, designation status, and socioeconomic importance.

7.7.3.15 Marine processes are typically best described as pathways in most cases, rather than receptors. Accordingly, although outputs from the marine processes assessments (including model results and additional evidence) will be reported in a stand-alone EIA chapter and assigned an impact magnitude, for the most part they will not be accompanied by statements of effect significance. Instead, the information on changes to the marine processes pathways will be used to inform other EIA topic assessments, including:

- Chapter 8, Marine Water & Sediment Quality;
- Chapter 10, Benthic, Subtidal, & Intertidal Ecology;
- Chapter 12, Fish & Shellfish Ecology;
- Chapter 11, Marine Mammals & Megafauna;
- Chapter 13, Commercial Fisheries; and
- Chapter 32, Protected Sites Assessment Strategy.

7.7.3.16 The assessment of potential LSE from indirect impacts from the identified marine processes pathways will be assessed within the relevant topic assessments identified above.

7.7.3.17 The marine processes features that are considered as marine processes receptors (rather than pathways) will be guided by tidal excursion, as to be further quantified using project-specific numerical modelling, and will include the following features:

- The adjacent coastline;
- Nearby offshore, designated, subtidal sandbanks and sandwave areas; and

- Nationally or internationally designated sites with interest features below MHW (seabed/ sedimentary/ geological interest features).

7.7.3.18 Based on this, impacts that have the potential to result in LSE will be considered in detail at the assessment stage. Section 7.7.3 sets out the proposed approach to assessment in relation to these impacts, which are described within the Impact Register (Annex 5.B).

7.7.3.19 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on marine processes receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

7.7.3.20 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on marine processes receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

7.8 Questions to Consultees

- Question 7.1: Do you agree with the Study Area that has been identified for marine processes?;
- Question 7.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 7.3: Do you agree that all impacts/ pathways/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 7.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to marine processes?;
- Question 7.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?; and
- Question 7.6: Given the data listed in Table 7.1, as well as the evidence base from other offshore energy projects in the region, do you believe that the use of numerical modelling is necessary for the assessment?

8 Marine Water & Sediment Quality

8.1 Introduction

- 8.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to marine water and sediment quality from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on marine water and sediment quality receptors.
- 8.1.1.2 For the purposes of this Chapter, marine water and sediment quality comprises the following elements (up to Mean High Water):
- Water Quality (including physical characteristics of the water column), Bathing Waters; and
 - Sediment Quality (including chemical contamination).
- 8.1.1.3 The marine water and sediment quality pathways are closely linked to seabed and water quality receptors, with this Chapter covering those within the Study Area (presented in section 8.3).
- 8.1.1.4 Marine water and sediment quality is closely linked to marine physical processes, and as such, this Chapter should be read alongside the following Chapter:
- Chapter 7, Marine Geology, Oceanography & Physical Processes, which considers the marine processes pathways which may have an effect on marine water and sediment quality receptors.

8.2 Legislation, policy and guidance

- 8.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 8.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 8.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to

marine water and sediment quality. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

8.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

8.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

8.2.2 Legislation

National legislation

- The Water Pollution Act 1993;
- The Water Pollution (Bathing Water Standards and Objectives) Scheme 2021;
- The Submarine Cables Act 2003; and
- The Wildlife Act 1990.

International legislation and agreements

- The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (collectively referred to as 'The EIA Regulations').

8.2.3 Policy

National policy

- The Isle of Man Strategic Plan 2016; and
- National Strategy on Sea Defences, Flooding and Coastal Erosion.

International policy

8.2.4 Guidance

National guidance

- Manx Marine Environmental Assessment. Physical Environment. Marine Pollution. Water Quality, Heavy Metals, Chlorinated Hydrocarbons, (Polycyclic Aromatic Hydrocarbons) PAHs, (Polychlorinated Biphenyls) PCBs, Plastics, Radioactivity & Air Quality (Kennington, 2018).

International guidance

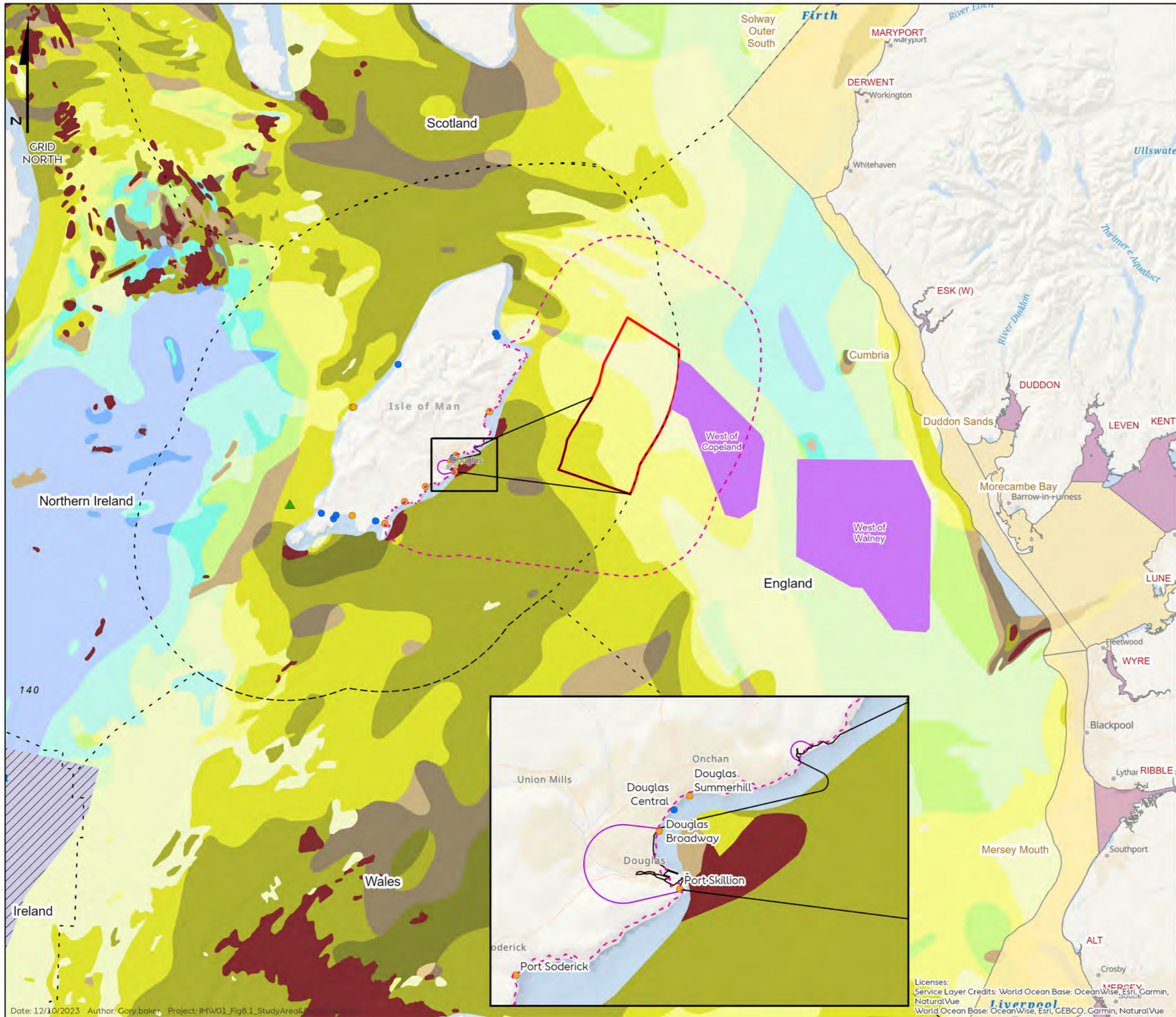
- The Overarching NPS for Energy (NPS EN-1; Department for Energy and Climate Change (DECC), 2011a) and the draft revised NPS EN-1 (DESNZ, 2023b);
- The NPS for Renewable Energy Infrastructure (NPS EN-3; DECC, 2011b) and the draft revised NPS EN-3 (DESNZ, 2023b); and
- The NPS for Electricity Networks Infrastructure (NPS EN-5; (DECC, 2011c)) and the draft revised NPS EN-5 (DESNZ, 2023c).

8.3 Study Area

8.3.1.4 As presented in Figure 8.1, the marine water and sediment quality Study Area is defined as the:

- Near-field, which consists of the:
 - Offshore Array;
 - Offshore Electrical Connection Search Area; and
 - Proposed landfall areas.
- Far-field, which consists of the:
 - Coastal and seabed areas outside the near-field, but within 12 km of the Proposed Development that may be influenced by marine water and sediment quality. This precautionary 12 km buffer is applied to align with modelled spring tidal excursion (ABPmer, 2008).

8.3.1.5 This Study Area aligns with that presented in Chapter 7, Marine Geology, Oceanography & Physical Processes. The marine water and sediment quality Study Area will be refined further during the EIA process, incorporating the project-specific modelling of tidal excursions and sediment plume pathways to refine the Zol.



Moor Vannin
 Figure 8.1
 Marine Water and Sediment Quality Study Area with Sensitive Areas and Seabed Sediments

--- Jurisdictional Boundaries

--- Marine Water and Sediment Quality Study Area

■ Marine Conservation Zone

Scoping Boundary

□ Offshore Electrical Connection Search Area

□ Terrestrial Electrical Connection Search Area

□ Offshore Array

Waterbodies

■ Coastal

■ Transitional

Bathing Water Quality - Sampling Locations

● Designated

● Non-designated

▲ Cypris Marine Monitoring Station

Seabed Sediments (Folk, 1954)

1.1.1 Mud	3.2.1 sandy Gravel
1.1.2 (gravelly) Mud	3.3.1 Gravel
1.2.1 sandy Mud	4.1.1 gravelly Mud
1.2.2 (gravelly) sandy Mud	4.2.1 muddy Gravel
1.3.1 muddy Sand	4.3.1 gravelly muddy Sand
1.3.2 (gravelly) muddy Sand	4.4.1 muddy sandy Gravel
2.1.1 Sand	5. Rock and Boulders
2.1.2 (gravelly) Sand	6. No data at this level of Folk
3.1.1 gravelly Sand	



Coordinate System: ETRS 1989 UTM Zone 30N
 Scale@A3: 1:550,000

0 4.75 9.5 19 Kilometers

0 1.75 3.5 7 Nautical Miles

REV	REMARK	DATE
1	First issue	12/10/2023

Main Title: MW&SQ Study Area
 Document no: IMW01_Fig8.1
 Created by: CB
 Checked by: AC
 Approved by: SB

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 APEM Group

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8.4 Baseline

8.4.1 Overview of baseline

- 8.4.1.4 An understanding of the marine water and sediment quality baseline conditions which control the features, pathways and receptors within the Study Area has been derived from publicly available data sources and literatures, as presented in Table 8.1. This baseline will be further developed following completion of project-specific surveys and updated in the subsequent phases of the EIA process. The full baseline characterisation will be made available following the Scoping Report, in the form of a 'Baseline Position Paper' shared via the Evidence Plan Process.
- 8.4.1.5 This baseline will be characterised further for utilisation in subsequent marine water and sediment quality assessments in the EIA.

Water Quality

Physical Characteristics of the Water Column

- 8.4.1.6 The physical characteristics of the Study Area are assessed as standard in this marine water and sediment quality Scoping Chapter, feeding into the baseline characterisation. The physical characteristics assessed typically include Suspended Sediment Concentrations (SSC), temperature, salinity, and dissolved oxygen concentrations. Collating this data allows for a thorough baseline characterisation to be made, as well as a determination to be made to whether the Proposed Development has the potential to affect the physical characteristics of the Study Area itself.
- 8.4.1.7 A monitoring buoy (named Cypris) was deployed by DEFA in 2023, collecting information on the physical parameters of the water column (as shown in Figure 8.1). At present, the data which is publicly available is a real-time feed from the buoy, rather than historical data for comparison. This monitoring buoy is also a considerable distance (approximately 13 km) from the Proposed Development, being situated along the southern coast of the Isle of Man.
- 8.4.1.8 The Applicant has deployed a wave buoy within the Offshore Array to collect metocean data for 12 months which commenced in September 2023.

Bathing Waters

- 8.4.1.9 The Isle of Man has several designated and non-designated bathing waters which are sampled regularly throughout the bathing season. Designated bathing waters are sampled weekly between 1 May to 18 September, with non-designated waters being sampled on a four-weekly basis. Due to these designations being dependent upon the water samples collected during the bathing season, this receptor is sensitive to changes in marine water and sediment quality.
- 8.4.1.10 The designated bathing water at Douglas Central is considered most at risk of significant effects, due to its close proximity to the Offshore Electrical Connection Search Area (as shown in Figure 8.1). The non-designated bathing waters which will be considered for further assessment include Douglas Broadway, Douglas Summerhill and Port Skillion. These designated and non-designated bathing waters are most relevant for both potential landfall locations, at Douglas Bay and Groudle Bay.
- 8.4.1.11 There are numerous combined sewer overflows discharging into Douglas Bay, which may impact water quality in storm or heavy rainfall events. In addition to this there are several streams/ rivers which discharge into Douglas Bay, with routine monitoring points set up to control impacts on water quality. Publicly available information on sewage discharges to Groudle Bay are limited, but it is known that Groudle River discharges into Groudle Bay (in the vicinity of the potential landfall location). Similar

to Douglas Bay, the Groudle River also includes a set monitoring points and feeds into the annual river quality report. In the absence of Water Framework Directive (WFD) nutrient sensitive areas and sensitive bathing waters, Douglas bathing water will be classed as sensitive due to the risk of nutrient pollution.

Sediment Quality

- 8.4.1.12 Sediment quality is assessed as a receptor for marine water and sediment quality due to the potential for disturbance of contaminated sediments. The sediments within the Offshore Array are finer than those found along the Offshore Electrical Connection Search Area, with finer sediment typically holding higher levels of contaminants (as shown in Figure 8.1). An analysis of the contaminant levels currently present within the marine water and sediment quality Study Area will be undertaken to characterise the baseline conditions and assess the potential for significant effects based on disturbance of any contaminated sediment.
- 8.4.1.13 Project-specific surveys are currently scheduled for September 2023, which will gather site-specific chemical contaminant data, for inclusion in the baseline characterisation.

8.4.2 Data sources

Table 8.1: Baseline Data Sources for marine water and sediment quality.

Source	Summary	Coverage of the Study Area
Isle of Man Government, Bathing water quality (Isle of Man Government, 2023a)	Data collected by the Isle of Man Government to quantify the performance of designated and non-designated bathing waters.	Partial coverage of the near-field Study Area This provides point data for the inshore waters near landfall, at designated and non-designated bathing waters.
Isle of Man Government, Cypris Marine Monitoring Buoy (Isle of Man Government, 2023b)	A monitoring buoy deployed off the southern coast of the Isle of Man to collect data on the physical characteristics of the water column.	Partial coverage of the far-field Study Area. The buoy is beyond the 12km buffer associated with the far-field Study Area, however significant changes in water characteristics are not anticipated between the location of the buoy and the Proposed Development.
Environment Agency, Water Quality Archive (Environment Agency, 2023)	Data collected by the Environment Agency to quantify the physical characteristics and performance of the water environment.	Partial coverage of the far-field Study Area (as it is considered unlikely for there to be large variations in characteristics between the monitoring stations and the array area)
OSPAR, OSPAR Intermediate Assessment 2017 (OSPAR, 2017)	This assessment provides OSPAR's understanding of the marine environment's current chemical status, in terms of chemical contamination of sediment.	Full coverage of the near-field and far-field Study Area. This assessment covers the Irish Sea generally, where the Proposed Development is located.
Project-specific benthic surveys (not yet available)	Benthic sediment grab samples will include data on particle size analysis and chemical contamination of sediment.	Full coverage of the near-field Study Area. Sediment samples will be obtained from various sampling locations in the near-

Source	Summary	Coverage of the Study Area
		field area, providing a full-coverage dataset.
Cefas, Suspended Sediment Climatologies around the UK (Cefas, 2016)	Seasonal and monthly suspended particulate matter maps for the UK.	Full coverage of the near-field and far-field Study Area. The data provides an overview of the Irish Sea, within which the Proposed Development is located.
UK Marine Monitoring and Assessment Strategy (UKMMAS) community (2010), 'Charting Progress 2'.	An overall assessment of the current state of the UK seas, which built upon the original Charting Progress report and set out a more structured and co-ordinated approach to assessing UK seas.	Partial coverage of the near-field and far-field Study Area (that which lies outside of Isle of Man Territorial Seas only) The data provides an overview of the Irish Sea, within which the Proposed Development is located.
APEM, Bathing Water Quality Phase 2: Proposed Environmental Quality Standards for the Isle of Man (APEM, 2020)	A review undertaken by APEM on the current environmental quality standards in relation to bathing waters in the Isle of Man, with proposed updates to the current standards.	Partial coverage of the near-field Study Area. This review focuses on inshore waters, so does not cover the offshore aspects of the Proposed Development.
Isle of Man Government, Manx Marine Environmental Assessment Documents, including Chapter 2: Marine Pollution (Kennington, 2018)	A regional characterisation of marine pollution in Isle of Man waters. This includes water quality, heavy metals, chlorinated hydrocarbons, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, plastics, radioactivity & air quality.	Partial coverage of the near-field Study Area. The sediment contaminant data is focused on the inshore area near landfall, rather than the offshore region where the majority of the Proposed Development offshore infrastructure is located.

8.4.3 Summary of key receptors

8.4.3.4 The key marine water and sediment quality receptors within the Study Area are shown in Figure 8.1, and identified as follows:

- Designated Isle of Man bathing waters:
 - Douglas Central.
- Non-designated Isle of Man bathing waters:
 - Douglas Broadway;
 - Douglas Summerhill;
 - Laxey; and
 - Port Skillion.
- Areas of contaminated seabed sediment.
 - To be assessed in the subsequent EIA, once project-specific survey outputs are available.

8.4.3.5 In terms of receptors outside the Isle of Man Territorial Sea, there are no designated coastal or transitional waters surrounding the Isle of Man, with the nearest being approximately 31 km away from the Proposed Development (the Cumbria coastal

waterbody in English waters). Due to the distance, it is not anticipated that significant effects will arise as a result of the Proposed Development, and as such these receptors are not considered further.

8.4.4 Further data collection to be undertaken

8.4.4.4 A thorough desk-based review of available information will be undertaken of relevant publicly available data, which will be used to inform the subsequent EIA, building upon the high-level outline provided within this Chapter of the Scoping Report. Project-specific survey outputs will be used to further enhance the understanding of the environmental baseline, which will include the benthic survey campaigns. These surveys are planned to commence in Q3 2023 and will collect information on the physical and chemical nature of the seabed in the Offshore Array and Offshore Electrical Connection Search Area.

8.4.4.5 The marine water and sediment quality baseline will be supported by information collated for Chapter 7, Marine Geology, Oceanography & Physical Processes. This current conceptual understanding of the processes baseline will be presented as a detailed baseline description section as part of the marine water and sediment quality chapter of the ES.

8.4.5 Future baseline

8.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

8.5 Identification of impacts and effects

8.5.1 Key parameters for assessment

8.5.1.4 The marine water and sediment quality scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- 100 Wind Turbine Generators with Gravity base foundations, and a maximum of five Offshore Substations with piled jacket foundations (a maximum of 105 positions);
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets); and
- Installation of electrical connection cables and landfall infrastructure associated with the intertidal zone.

8.5.1.5 The MDS assessed for each impact will be considered within the overall Design Envelope, as presented in Chapter 3, Project Description. Numerical modelling (conducted for Chapter 7, Marine Geology, Oceanography & Physical Processes) will be used to inform the MDS for some marine water and sediment quality impacts, with the planned modelling outlined in section 8.7.3. The MDS for other impacts will be defined by the construction methods, infrastructure dimensions and quantities, and the intensity of activities.

8.5.2 Commitments

8.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to marine water and sediment quality are described in Table 8.2 below.

Table 8.2: Relevant commitments to marine water and sediment quality.

ID	Measure proposed	How this measure will be secured	Rationale
Co1	Development of, and adherence to, an Invasive Non-Native Species (INNS) Management Plan.	MIC condition.	To limit the introduction and/or spread of INNS.
Co2	Development of, and adherence to, an Asset Installation & Protection Plan (AIPP) detailing the quantities and installation methods for subsea infrastructure, informed by the Cable Burial Risk Assessment.	MIC condition.	To inform judgements on required cable burial depth, ensuring cable burial where possible while limiting the potential for cable exposure and minimising the amount of seabed disturbance required. The cable installation methods may affect the degree of sediment disturbance, so will be necessary in mitigation affects from potential disturbance of contaminated sediments.
Co4	Development of, and adherence to, a Marine Pollution Contingency Plan (MPCP) addressing the risks, methods and procedures for dealing with any offshore spills and/or pollution events.	MIC condition.	To minimise the potential for anthropogenic pollution inputs into the marine environment.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	This details the methods for removal of offshore infrastructure, including buried cables and cable protection. This removal process may lead to a temporary, localised increase in SSC.
Co7	Development and implementation of a Project Impact Monitoring & Mitigation Programme (PIMMP).	MIC condition.	To set out environmental monitoring during the pre-construction, construction, post-construction and O&M phases. The pollution prevention and chemical usage aspects of the PIMMP are of particular relevance to marine water and

ID	Measure proposed	How this measure will be secured	Rationale
			sediment quality, due to the assessment of chemical contaminants and accidental spills/ releases of chemicals. This PIMMP will contain practices for how to respond in the event of an accident/ spill, significantly lowering the environmental risk.

8.5.3 Approach to assessment of likely significant effects

8.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on marine water and sediment quality at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

8.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the project progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

8.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 8.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on marine water and sediment quality based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified marine water and sediment quality lead.

8.6 Proposed approach to the EIA

8.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on marine water and sediment quality associated with the Proposed Development that have (or do not have) the potential to result in LSE.

8.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 8.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 8.7.3.

- 8.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 8.6.1.7 For marine water and sediment quality, the assessment of impacts will also follow specific guidance. This is further detailed within section 8.7.3 below.
- 8.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

8.7 Post-scoping

8.7.1 Overview

- 8.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For marine water and sediment quality, the scoping study has identified:
- One impact which have the potential to result in No LSE; and
 - Four impacts which have the potential to result in LSE.

8.7.2 No LSE and next steps

- 8.7.2.4 To support the conclusion of no LSE at the scoping stage, the Applicant will bring forward further evidence via the EPP. This will take the form of a Position Paper, which will provide this supporting information such as the presentation of evidence regarding the low likelihood of secondary scour to the Physical Subgroup of the Offshore Environment Technical Advisory Group (TAG) as part of the EPP. This is anticipated to be provided in Q4 2023 following submission of the Scoping Report.

8.7.3 LSE and next steps

Supporting studies

- 8.7.3.4 The numerical model discussed in Chapter 7, Marine Geology, Oceanography & Physical Processes will contain information of relevance to further marine water and sediment quality assessments, particularly tidal excursions and suspended sediment concentrations. This model will be applied as appropriate to assess the source-pathway-receptor relationships for scenarios where there is potential for LSE (based on a realistic MDS, as presented in Chapter 3, Project Description). The modelling outputs will support the information gathered through project-specific studies and desk-based review of publicly available information, providing a more robust baseline characterisation. Further information on this numerical modelling process will be provided as part of the Evidence Plan Process.

Assessment Methodology

- 8.7.3.5 The EIA will assess the potential impacts on marine water and sediment quality identified in the Impacts Register (Annex 5.B).
- 8.7.3.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology of this Scoping Report (EIA Methodology).

8.7.3.7 In addition to this general approach, the assessment of impacts on marine water and sediment quality will also follow the guidance documents below where they are specific to this topic:

- EIA for offshore renewable energy projects (British Standards Institution, 2015);
- Coastal Process Modelling for Offshore Wind Farm EIA; Best Practice Guide (Lambkin *et al.*, 2009);
- Guidelines for Data Acquisition to Support Marine Environmental Assessments of Offshore Renewable Energy Projects (Cefas, 2011);
- Marine Scotland Consenting and Licensing Guidance for Offshore Wind, Wave and Tidal Energy Applications (Marine Scotland, 2018);
- Review of Cabling Techniques and Environmental Effects applicable to the Offshore Wind farm Industry. Department for Business Enterprise and Regulatory Reform (BERR) in association with Defra (BERR, 2008);
- Offshore Windfarms: Guidance note for EIA in Respect of FEPA 1985 and CPA 1949 requirements (Cefas, 2004);
- Review of environmental data associated with post-consent monitoring of licence conditions of offshore wind farms. Marine Management Organisation (MMO) Project No: 1031 (Fugro-Emu, 2014);
- Offshore wind cabling: ten years' experience and recommendations (Natural England, 2018);
- Best Practice Advice for Evidence and Data Standards for offshore renewables projects (Natural England, 2022);
- Further review of sediment monitoring data (COWRIE ScourSed-09) (ABPmer *et al.*, 2010);
- Review of Round 1 Sediment process monitoring data – lessons learnt (Sed01) (ABPmer *et al.*, 2007); and
- Dynamics of scour pits and scour protection – Synthesis report and recommendations (Sed02) (HR Wallingford *et al.*, 2007).

8.7.3.8 As outlined in Chapter 5, EIA Methodology of this Scoping Report, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

8.7.3.9 For marine water and sediment quality, impact magnitude will be determined by a qualitative assessment based on a semantic scale, as defined by a combination of permanency of change and spatial extent.

8.7.3.10 The sensitivity of marine water and sediment quality receptors will be determined by the capacity of receptors to accommodate change, as well as rarity, designation status and socioeconomic importance.

8.7.3.11 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on marine water and sediment quality receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

8.7.3.12 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on marine water and sediment quality receptors, in accordance with

the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

8.8 Questions to Consultees

- Question 8.1: Do you agree with the Study Area that has been identified for marine water and sediment quality?;
- Question 8.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 8.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B);
- Question 8.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to marine water and sediment quality?; and
- Question 8.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

9 Offshore Ornithology

9.1 Introduction

- 9.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to offshore ornithology from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on offshore ornithology receptors.
- 9.1.1.2 This Chapter has links with the following Chapters and therefore should be read alongside them:
- Chapter 19, Onshore Ecology, considers the impacts on birds in the intertidal and onshore areas.
 - Chapter 32, Protected Sites Assessment Strategy, details the Applicant's intended strategy for the consideration of impacts on designated sites within Isle of Man Territorial Seas; and
 - Annex 32.A, Transboundary Protected Sites Assessment Screening, details the Applicant's intended strategy and provides a screening assessment for the consideration of impacts on transboundary designated sites outside of the Isle of Man Territorial Seas.

9.2 Legislation, policy and guidance

- 9.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- 9.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 9.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to offshore ornithology. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 9.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address

applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

9.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

9.2.2 Legislation

National legislation

- Wildlife Act (1990) - Manx bird populations are protected by the Wildlife Act (1990). This legislation protects birds, and their nests and eggs from intentional or reckless killing, injuring or removal, with species listed on Schedule 1 being afforded the greatest protection. These species require additional licensing for trapping, and the application of markers and tags. The Wildlife Act also provides the legal framework through which Areas of Special Protection (ASPs), Areas of Special Scientific Interest (ASSIs), National and Marine Nature Reserves (NNRs and MNRs respectively) are established.

International legislation and agreements

9.2.2.4 The Isle of Man is also a signatory to many international conventions. These are particularly relevant to seabirds as they address migratory species and cross-boundary conservation. The following conventions are relevant in the context of this Chapter:

- The Convention on Migratory Species (the Bonn Convention 2012), compelling signatories to conserve migratory species and their habitats, with particular emphasis on those with unfavourable conservation status;
- The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA 2012), protecting migratory species and habitats for birds using the European, Middle Eastern and African migration flyway;
- The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention, with the Birds Directive of particular relevance) obliges signatories to designate the most important areas for a suite of species (either listed on Annex 1 or regularly occurring migratory species) as Special Protection Areas, with additional monitoring and reporting obligations;
- The Convention on Wetlands of International Importance (the Ramsar Convention) is an instrument for identifying and protecting signatories most important wetland sites and wetland bird populations; and
- The Convention for the Protection of the Marine Environment of the North East Atlantic (the OSPAR Convention) requires signatories to protect the marine environment from human impacts, conserve ecosystems, and where practicable, restore impacted marine areas.

9.2.3 Policy

National policy

- Isle of Man Strategic Plan 2016 - The Manx environment is afforded protection through a series of environmental policies, principally within the Strategic Plan 2016 (for example, Environment Policy 4).

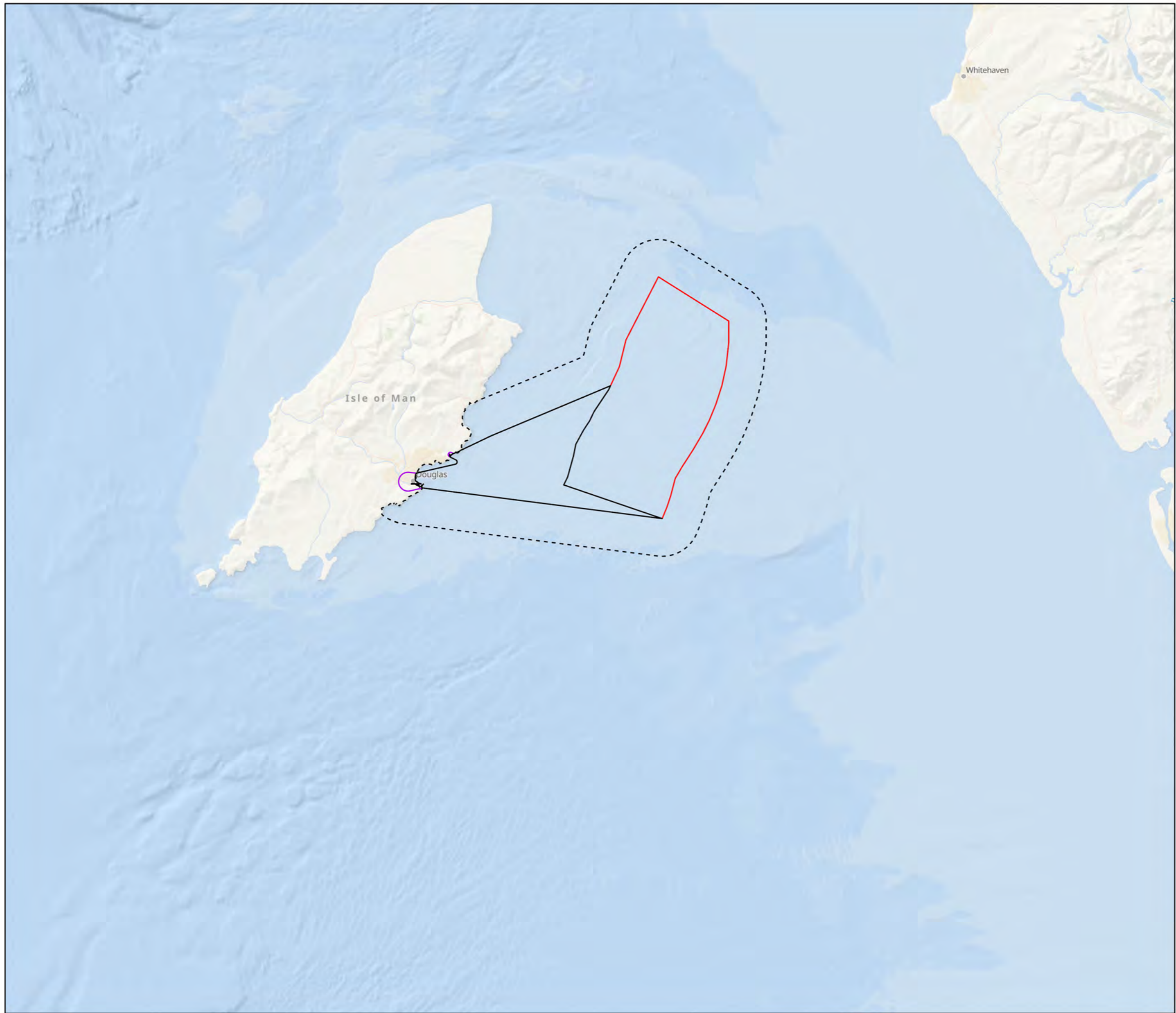
9.2.4 Guidance

International guidance

- 9.2.4.4 Guidance on assessment methodologies for seabirds interacting with offshore wind farms has been taken from the sources listed below:
- Chartered Institute of Ecology and Environmental Management (CIEEM) guidance (2018; updated 2019); and
 - Natural England phase I and III guidance documents (Natural England, 2021a; 2021b)

9.3 Study Area

- 9.3.1.4 The area covered includes a 4 km buffer around the Offshore Array, plus the footprint of the Offshore Electrical Connection Search Area (Figure 9.1). This is the area considered to represent a realistic maximum spatial extent of potential impacts on Important Ornithological Features (IOFs). It is also the extent of coverage of the Digital Aerial Survey (DAS) to characterise the baseline ornithological receptors present within the vicinity of the Proposed Development.
- 9.3.1.5 Use of the Study Area by seabirds will vary over the course of a year. In the breeding season, most birds present will be associated with breeding colonies, making frequent foraging trips from the nest in order to provide for young. Source colonies for these birds can be derived from apportioning to breeding colonies within foraging range (i.e., a species-specific distance from colonies that birds will forage when breeding). During the non-breeding season birds may either use the Study Area as a wintering ground (i.e., for feeding), as a migratory stopover or simply passing through without stopping.
- 9.3.1.6 It should be noted that the Study Area may be subject to review and amendment for future stages as a result of such matters as the identification of additional environmental or engineering constraints.



Moor Vannin

Figure 9.1
Offshore Ornithology Study Area

--- Ornithology Study Area

Scoping Boundary

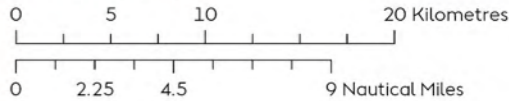
□ Offshore Electrical Connection Search Area

□ Terrestrial Electrical Connection Search Area

□ Offshore Array



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:400,000



REV	REMARK	DATE
	First issue	12/10/2023

Title: Ornithology Study Area
Document no: IMW01_Fig9.1
Created by: GB
Checked by: ML
Approved by: SB



9.4 Baseline

9.4.1 Overview of baseline

9.4.1.4 Between August 2021 and July 2023, data were collected on a monthly survey frequency by HiDef Aerial Surveying Limited ('HiDef'). The survey area encompassed the Offshore Array with a 4 km buffer (Figure 9.1).

9.4.1.5 The survey sampled the 572.7 km² survey area achieving a target of 10% coverage, flying transects sampling a 500 m strip with a resolution of 2 cm Ground Sample Distance (GSD); i.e. one pixel is equal to 2 cm on the ground. The data provide distribution, densities and abundances for all observed species. At the time of producing this scoping report, analysis of these data has only been completed for the period August 2021 – January 2023. The raw counts obtained from these surveys have been used to inform this Scoping report. The species identified as being present during DAS, their annual (raw) counts and peak (raw) counts are presented in Table 9.1.

Table 9.1: Species identified within the Study Area during DAS.

Species	Scientific name	Annual total from DAS	Peak raw count	Month of peak raw count
Shelduck	<i>Tadorna tadorna</i>	2	2	October
Curlew	<i>Numenius arquata</i>	1	1	November
Kittiwake	<i>Rissa tridactyla</i>	738	232	February
Little gull	<i>Hydrocoloeus minutus</i>	1	1	January
Black-headed gull	<i>Chroicocephalus ridibundus</i>	1	1	March
Common gull	<i>Larus canus</i>	4	1	Oct, Nov, Dec, Mar
Great black backed gull	<i>Larus marinus</i>	29	14	February
Herring gull	<i>Larus argentatus</i>	47	11	Sep, Dec, Jan
Lesser black-backed gull	<i>Larus fuscus</i>	14	6	March
Arctic tern	<i>Sterna paradisaea</i>	6	6	May
Great skua	<i>Catharacta skua</i>	1	1	September
Guillemot	<i>Uria aalge</i>	2912	508	September
Razorbill	<i>Alca torda</i>	1015	621	October
Black guillemot	<i>Cephus grylle</i>	1	1	June
Puffin	<i>Fratercula arctica</i>	20	11	August
Great-northern diver	<i>Gavia immer</i>	1	1	February
Red-throated diver	<i>Gavia stellata</i>	36	15	February
Fulmar	<i>Fulmarus glacialis</i>	22	5	March
Manx shearwater	<i>Puffinus puffinus</i>	686	262	June

Species	Scientific name	Annual total from DAS	Peak raw count	Month of peak raw count
Gannet	<i>Morus bassanus</i>	253	80	August
Cormorant	<i>Phalacrocorax carbo</i>	1	1	November
Shag	<i>Gulosus aristotelis</i>	7	4	February

9.4.2 Data sources

9.4.2.4 The resources accessed to provide species-specific information on abundance and distribution within reasonable proximity to the Proposed Development and inform the biological seasons and behaviour of relevant birds are described in Table 9.2.

Table 9.2: Baseline data sources.

Source	Summary	Coverage of the Study Area
HiDef DAS	Aerial survey campaign between August 2021 and July 2023 to provide distribution, densities and abundances for all observed species	10% coverage of the Offshore Array area
Awel y Môr Offshore Wind Farm Category 6: Environmental Statement Volume 2, Chapter 4: Offshore Ornithology (RWE 2023)	Existing Environmental Statements and Preliminary Environmental Impact Assessments (PEIRs) for constructed OWFs or OWFs in planning that are within close proximity to the Project.	No coverage of the Study Area, but provides regional context in terms of bird populations and phenology.
Morgan Offshore Wind Project Generation Assets, PEIR: Volume 2, Chapter 10: Offshore Ornithology (RPS, 2023b)		
Mona Offshore Wind Project, Preliminary Environmental Information Report (PEIR): Volume 2 Chapter 10: Offshore Ornithology (RPS, 2023a)		
Morecambe Offshore Windfarm (OWF): Generation Assets: PEIR, Volume 1, Chapter 12, Offshore Ornithology (Royal HaskoningDHV, 2023)		
Stone <i>et al.</i> 1995	Seabird distribution and movements within UK and European waters	Full, within the context of full coverage of UK waters.
Stienen <i>et al.</i> 2007		Full
Wernham <i>et al.</i> 2002		Full, in context of information on birds

Source	Summary	Coverage of the Study Area
		migration, with some inference of routes taken, allowing migratory passage across the entire project area to be inferred
Waggitt <i>et al.</i> , 2019		Full, within the context of full coverage of UK waters
Cleasby <i>et al.</i> , 2020)		Full
DTI 2005		Full
Furness, 2015	Seabird, waterbird and other bird species population estimates for the UK and wider regions	Full
Musgrove, 2013		NA
Mitchell <i>et al.</i> 2004		NA
BTO, 2023		NA
The Isle of Man Seabird Census 2017-18	Available local datasets from Manx BirdLife	Focuses on terrestrial and inshore populations
The Manx Bird Atlas		Focuses on terrestrial and inshore populations

9.4.3 Summary of key receptors

9.4.3.4 This section provides information on the baseline marine ornithological environment, gathered from a desk-based assessment of information available to date.

9.4.3.5 A review of available data suggested the following species might be present in the Study Area in numbers sufficient for potential LSE relating to collisions:

- Kittiwake;
- Great black-backed gull;
- Herring gull;
- Lesser black-backed gull; and
- Gannet.

9.4.3.6 The following species may be present in the Study Area in numbers sufficient for potential LSE relating to displacement:

- Guillemot;
- Razorbill; and
- Red-throated diver.

9.4.3.7 Manx shearwater were also present in relatively high numbers. This species is not vulnerable to impacts from collisions or displacement. Assessment of this species will be carried out in consultation with relevant consultees.

Designated sites

9.4.3.8 The Offshore Array does not directly overlap with any ornithological designations. However, breeding seabirds can travel considerable distances, so it is necessary to consider sites beyond the Proposed Development site. Connectivity between the

Proposed Development and breeding seabird sites is largely a function of the species present and their species-specific foraging ranges. Outside the breeding season, patterns of migration and wider scale 'at sea' populations are used to infer the origins of species recorded. Terrestrial/ coastal sites designated for migrant species outside the breeding season may therefore be connected on the grounds of passage movements through the Offshore Array area.

- 9.4.3.9 The Applicant's intended strategy for the full consideration of connectivity of designated sites (both within the Isle of Man and in other jurisdictions) is provided within Chapter 32, PSA Strategy. This will include consideration of coastal terrestrial sites hosting over-wintering and migratory populations with the potential to undertake migratory flights across the Offshore Array.

9.4.4 Further data collection to be undertaken

- 9.4.4.4 DAS covering the Offshore Array and a 4 km buffer are completed and reporting is in progress. Once available, the dataset will describe 24 months of surveys, with abundance and density data for all species and species groups (where specific identifications could not be made). Each record will have a position associated, along with data on age, sex, behaviour and flight direction where practicable. Flight height data will be provided as part of the DAS dataset, although industry standard flight heights may be used for assessment.
- 9.4.4.5 Although outside the remit of this Chapter, intertidal and wintering bird surveys are being carried out and will be reported within the remit of Chapter 19, Onshore Ecology.
- 9.4.4.6 Density and abundance will be estimated using design-based methods, with the density estimated for the surveyed area (i.e. the sum of all the aerial image footprints) and multiplied up to the total area to obtain an abundance estimate. This method makes the assumption that the surveyed sample is representative of the un-surveyed region, thus the design of survey is important (hence 'design based').
- 9.4.4.7 In addition, information from previous surveys in the wider area will be collated and provide further contextual information, alongside the literature and information sources outlined above in Table 9.2.
- 9.4.4.8 Confidence intervals for each species will be obtained using a bootstrap resampling method. For each survey, aerial survey images will be drawn randomly (with replacement) from the dataset until the same number of images as the original sample is obtained (e.g. if the survey for a particular month comprised 350 images, each resampled dataset also contained 350 images, drawn with replacement from the original dataset). This process will be repeated 1,000 times and then density and abundance will be calculated for each resampled dataset. The upper and lower 95% confidence limits will be calculated across the 1,000 samples to estimate sampling variation. The width of the confidence interval obtained using this method reflects the degree of aggregation in the species, with highly aggregated species estimated with lower precision (i.e. species observed frequently as individuals will have a small range of estimated densities, while species recorded in occasional large groups will have a wide range of estimated densities).
- 9.4.4.9 Any birds recorded during the aerial surveys that cannot be identified to species level will be assigned to a species. To do this, the density of each unidentified bird grouping (e.g. large gulls, small gulls, etc.) will be estimated (using the methods described above) and then added proportionately to each member species of that group. The proportions will be calculated from the ratios of positively identified birds in that group.

9.4.5 Future baseline

9.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

9.5 Identification of impacts and effects

9.5.1 Key parameters for assessment

9.5.1.4 The offshore ornithology Scoping study is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- The construction, operation and decommissioning of up to 100 Wind Turbine Generators (WTGs) and up to five Offshore Substations;
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets); and
- Increased vessel traffic associated with construction, operational and decommissioning activities.

9.5.1.5 For key impacts regarding offshore ornithology (collisions and displacement), the MDS will be defined by the number of WTGs, the minimum blade tip height, the size of the rotor swept area, and the overall size and layout of the array, and space that it occupies. This approach ensures that the scenario that would have the greatest impact is assessed; it can then be assumed that any other (lesser) scenarios will have an impact that is no greater than that assessed in line with the Design Envelope approach.

9.5.2 Commitments

9.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to offshore ornithology are described in Table 9.3 below.

9.5.2.5 Consultation with key ornithological stakeholders will be ongoing through the EPP via the Biological Subgroup of the Offshore Environment Technical Advisory Group (TAG) and will cover the need for commitments and monitoring requirements.

Table 9.3: Relevant commitments to offshore ornithology.

ID	Measure proposed	How this measure will be secured	Rationale
Co4	Development of, and adherence to, a MPCP addressing the risks, methods and procedures for dealing with any offshore spills and/or pollution events.	MIC condition.	To minimise the potential for anthropogenic pollution inputs into the marine environment.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning,

ID	Measure proposed	How this measure will be secured	Rationale
			prior to those activities taking place at the end of the operational life of the project.
Co7	Development and implementation of a Project Impact Monitoring & Mitigation Programme (PIMMP).	MIC condition.	To set out environmental monitoring during the pre-construction, construction, post-construction and O&M phases.
Co34	The use of 'low order' techniques (such as deflagration) where practicable for the clearance of UXO, should UXO be encountered.	MIC condition.	To minimise effects associated with clearance of UXO.

9.5.3 Approach to assessment of likely significant effects

9.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on offshore ornithology at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

9.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the project progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

9.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 9.3 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on offshore ornithology based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified offshore ornithology lead.

9.6 Proposed approach to the EIA

9.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on offshore ornithology associated with the Proposed Development that have (or do not have) the potential to result in LSE.

9.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 9.7.2; and

- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 9.7.3.

9.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

9.6.1.7 For offshore ornithology, the assessment of impacts will also follow specific guidance. This is further detailed within section 9.7.3 below.

9.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progresses; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

9.7 Post-scoping

9.7.1 Overview

9.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For offshore ornithology, the scoping study has identified:

- One impact which have the potential to result in No LSE; and
- Six impacts which have the potential to result in LSE.

9.7.2 No LSE and next steps

9.7.2.4 For impacts where no LSE has been identified, this will be supported by a position paper that will be provided via the EPP. An assessment methodology note will be provided to the Biological Subgroup of the Offshore Environment TAG as part of the EPP and a baseline characterisation, which will be prepared once the complete DAS dataset is available, will also be used to confirm the final screening of species within the Study Area, for which LSE will be assessed.

9.7.3 LSE and next steps

Supporting studies

9.7.3.4 The 24 months of DAS covering the Offshore Array (and associated 4 km buffer) between August 2021 and July 2023 will provide the key data source for the baseline characterisation and quantification of parameters for the impact assessment.

9.7.3.5 The EIA will also be supported by key quantitative assessments, as described below.

Disturbance and displacement

9.7.3.6 Disturbance and displacement impacts will be assessed following the recommended matrix approach (SNCB, 2017) based on the abundance estimates within the appropriate species-specific site plus buffer areas. This will be completed using the site mean peak population estimates, for applicable bio-seasons as defined by Furness *et al.*, 2015. Consideration will be given to model-based approaches, such as SeabORD, Searle *et al.*, (2018), through discussion with the Biological Subgroup of the Offshore Environment TAG. The additional estimated mortality will be apportioned to breeding colonies within species-specific foraging ranges.

- 9.7.3.7 Assessment of displacement will be made by applying the most applicable displacement rates and rates of subsequent mortality to the populations that use the site, as modelled from the DAS data collected.

Collision risk

- 9.7.3.8 Collision risk will be quantified using the deterministic Band model approach (Band, 2012), although model runs will be carried out accounting for variation in parameters and upper and lower confidence limits in the population estimates. The collision risk models will incorporate currently recommended avoidance rates and nocturnal activity factors (Cook *et al.*, 2014; SNCB, 2014), although these will be presented alongside estimates based on other rates if emerging evidence from monitoring studies indicates any likely updates to the previously published rates. Other physical modelling parameters, including bird size, flight speed, flight type etc, will follow best practice and will be set out and agreed through the Evidence Plan Process.
- 9.7.3.9 Flight height data will be reported, however, owing to the technical difficulties in estimating flight height from aerial imagery, it is anticipated that generic flight data (Johnston *et al.*, 2014a, 2014b) will be used in the collision risk model (subject to discussion with stakeholders). Thus, Collision Risk Modelling (CRM) will be conducted using the Stochastic CRM tool, which presents all options defined by Band (2012).

Population Viability Analysis

- 9.7.3.10 The potential impacts arising from collision risk and displacement will be summed to estimate overall additional mortality in seabird populations. If there is an increase of more than 1% in the baseline mortality rate in the population, this may trigger more detailed investigation of population-level effects. Below this 1% threshold, there are unlikely to be LSE; however the impact will still be quantified and considered in the CEA.
- 9.7.3.11 Where given further consideration, the impact will be apportioned appropriately to breeding colonies following the latest available guidance (in preparation by Natural England). Impacts given further consideration may be analysed using Population Viability Analysis (PVA) (Searle *et al.*, 2019), with model parameterisation agreed through close consultation with the relevant expert groups.

Assessment methodology

- 9.7.3.12 The EIA will assess the potential impacts on offshore ornithology identified in the Impacts Register (Annex 5.B).
- 9.7.3.13 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 9.7.3.14 In addition to this general approach, the assessment of impacts on offshore ornithology will also follow the following guidance documents identified in section 9.2.4.
- 9.7.3.15 Potential impacts will also be assessed against relevant population scales, as defined for relevant species-specific bio-seasons and bioregions by Furness *et al.*, (2015). Furness (2015) presents biologically defined minimum population scales informed by breeding populations and demographic rates, allowing a proportion of immature birds (which would be impossible to derive from current census approaches) to be calculated for bio-geographic populations with connectivity to UK waters.
- 9.7.3.16 For each species, spatial scales informed by source populations and extent of mixing in the non-breeding season, are defined within UK waters, and presented with associated populations. Species-specific bio-seasons are also presented, taking into account each species breeding phenology, migration, and wintering behaviour. The

result is a suite of bird populations for given areas at given times of year, for each species.

- 9.7.3.17 Impact magnitude for both collisions and displacement will be determined within the context of mortalities additional to the baseline mortality level, at a relevant population scale (such as colony or site population, or biologically defined minimum population scale as defined by Furness *et al.*, (2015).
- 9.7.3.18 The sensitivity of each species will be determined based on the size of its population, its conservation status and its known sensitivity to the identified impact pathways. Species identified as IOFs will be subject to full impact assessment against the impacts listed in the Impacts Register (Annex 5.B).
- 9.7.3.19 The impact assessment will be undertaken in line with guidance by CIEEM (2018; updated 2019) and expert opinion.
- 9.7.3.20 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on offshore ornithology receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 9.7.3.21 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other marine users receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

9.8 Questions to Consultees

- Question 9.1: Do you agree with the Study Area that has been identified for offshore ornithology?;
- Question 9.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 9.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 9.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to offshore ornithology?;
- Question 9.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 9.6: Do you agree with the proposed methodology for the CRM?; and
- Question 9.7: Do you agree that Manx shearwater are not sensitive to either collision or displacement impacts?

10 Benthic Subtidal & Intertidal Ecology

10.1 Introduction

- 10.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to benthic subtidal and intertidal ecology from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on benthic subtidal and intertidal ecology receptors up to MHW.
- 10.1.1.2 Benthic subtidal and intertidal ecology is the study of populations and communities that live on, in, or near the seabed. Due to the construction impinging on the sea floor, development of OWFs has the potential to impact on these habitats and communities.
- 10.1.1.3 This Chapter has close links with, and should therefore be read alongside, the following Chapters:
- Chapter 7, Marine Geology, Oceanography & Coastal Processes, which considers the changes to coastal processes that have the potential to impact benthic subtidal and intertidal ecology receptors directly or indirectly; and
 - Chapter 12, Fish & Shellfish Ecology, which considers species that live within the benthos and therefore there is a degree of overlap between these topics.

10.2 Legislation, policy and guidance

- 10.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 10.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 10.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to benthic subtidal and intertidal ecology. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

10.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

10.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

10.2.2 Legislation

National Legislation

- Wildlife Act 1990 – this is the main piece of Manx legislation relating to the protection of the Isle of Man’s fauna and flora. The provisions are broadly the same as those of the Wildlife and Countryside Act (WCA) 1981 (as amended) in England and Wales. The Act sets out schedules of Manx species of animal and plant that are protected by law from injury or disturbance. It also establishes the legal protection of Areas of Special Scientific Interest (ASSI) and National Nature Reserves (NNR), as well as other site designations. It also provides for the conservation of marine and coastal habitats through site protection and species protection;
- Fisheries Act 2012 – this provides supervision and protection of inland and sea fisheries, and fosters the establishment and development of such fisheries; and
- Water Pollution Act 1993 – this enshrines in law several international conventions that the Isle of Man is a signatory to: Oslo Paris Convention (OSPAR), London, Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) and CBD, all of which have priorities that aim to reduce marine pollution.

International legislation and agreements

- The Convention for the Protection of the Marine Environment of the North East Atlantic (the OSPAR Convention) - requires signatories to protect the marine environment from human impacts, conserve ecosystems, and where practicable, restore impacted marine areas.

10.2.3 Policy

National Policy

- Isle of Man Strategic Plan 2016 – this sets out an Island-wide policy framework and general policies for the development of and use of land within the Isle of Man and marine environment within the Isle of Man’s jurisdiction. If a development could have a significant environmental effect, then an EIA is required. The criteria for judging significance include locations within environmentally sensitive locations.
- Managing our Natural Wealth’ – The Isle of Man Biodiversity Strategy 2015-2025 - this strategy sets out how government, business and people can conserve and enhance nature. The strategic aims are:
 - Managing biodiversity changes to minimise loss of species;
 - Maintaining, restoring and enhancing native biodiversity, where necessary; and

- Involving society in understanding, appreciating and safeguarding biodiversity.

10.2.4 Guidance

National guidance

- Manx Marine Environmental Assessment (Howe, 2018) – contains guidance on what considerations should be given with regard to future development.

International guidance

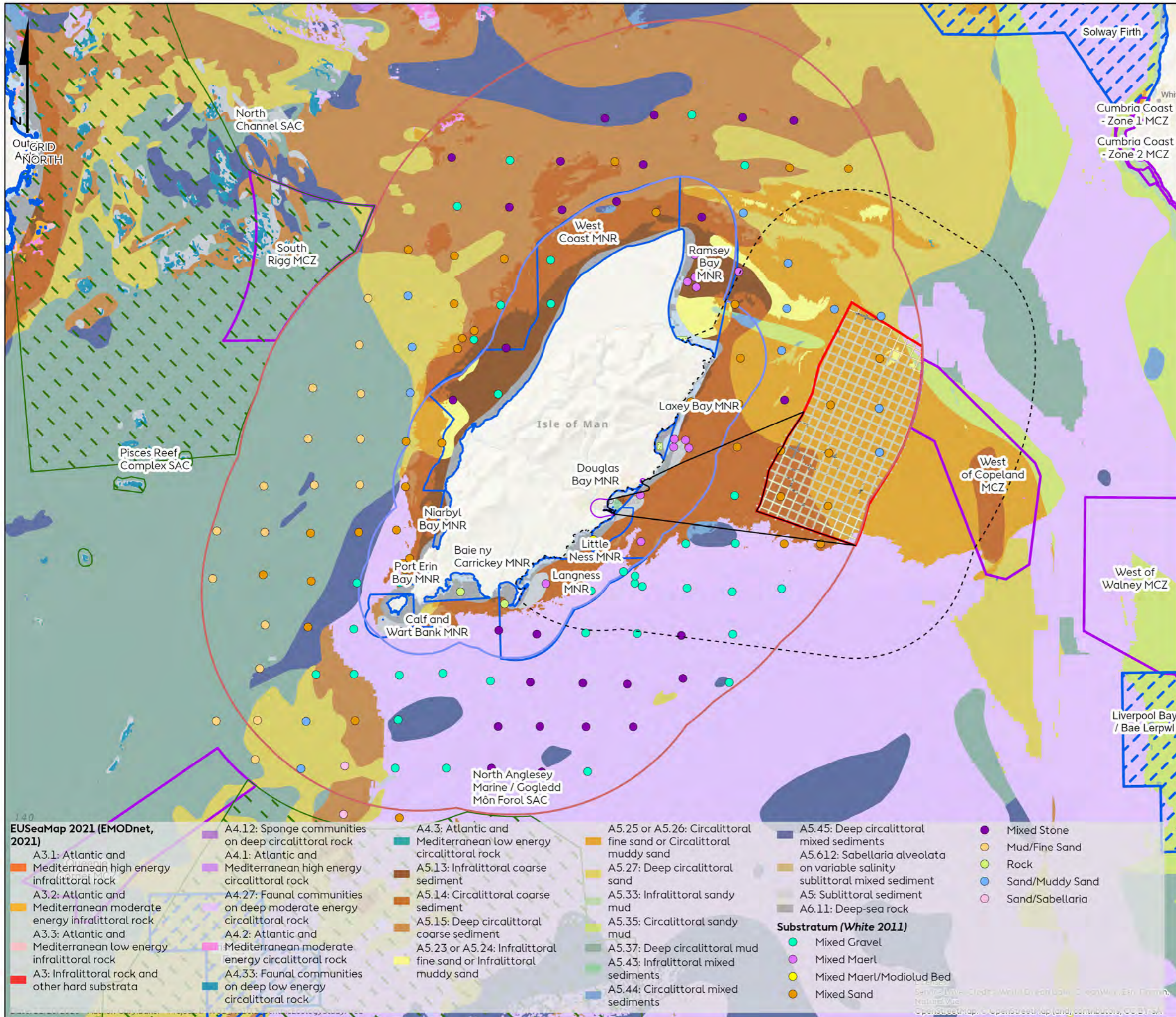
- Guidance note for EIA in respect of FEPA and CPA requirements (Centre for Environment, Fisheries and Aquaculture (Cefas, 2004);
- Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Judd, 2012); and
- Marine Evidence-based Sensitivity Assessment (MarESA) Guidance Manual (Tyler-Walters *et al.*, 2023).

10.3 Study Area

10.3.1.4 The benthic and intertidal ecology Study Area is defined by the Proposed Development plus an appropriate buffer of the wider Zol, as presented in Figure 10.1. This includes the Offshore Array, Offshore Electrical Connection Search Area, the proposed intertidal landfall, as well as the Zol, associated with potential secondary impacts.

10.3.1.5 The Study Area for benthic subtidal and intertidal ecology encompasses the area over which suspended sediment might disperse following disturbance as a result of activities associated with the Proposed Development. For the purposes of scoping, this has been determined as the extent of the spring tidal excursion, between 8 and 11.5 km (ABPmer, 2008) resulting in the adoption of a precautionary buffer of 12 km. The wider Zol therefore determines the range over which indirect effects of the Proposed Development may impact on benthic ecology receptors (e.g., increased Suspended Sediment Concentration (SSC) and deposition).

10.3.1.6 This Study Area may be further refined as required at post-scoping stages to reflect project-specific sediment plume modelling work that may be undertaken within the physical processes assessment (see Chapter 7, Marine Geology, Oceanography & Physical Processes), as well as outputs from stakeholder consultation and the evolution of the Design Envelope. This may result in an adapted and refined Study Area for the assessment stage.



Moor Vannin

Figure 10.1
Subtidal Benthic Ecology Study Area
with Broadscale Habitats and Designations

- 12nm - Territorial Limit
- 3nm - Fisheries Limit
- - - Subtidal Benthic Ecology Study Area

Scoping Boundary

- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array

Designations

- Special Protection Area
- Special Area of Conservation
- Marine Conservation Zone
- Eelgrass Conservation Zone
- Marine Nature Reserves

Seabed Features

- Boulders
- SAND with GRAVEL ribbons & occasional megaripples
- SAND, generally featureless
- Sandy GRAVEL, generally featureless

Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:400,000

0 3.5 7 14 Kilometers
0 1.5 3 6 Nautical Miles

REV	REMARK	DATE
1	First issue	12/10/2023

Main Title: Study Area
Document no: IMW01_Fig10.1
Created by: CB
Checked by: DB
Approved by: SB

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10.4 Baseline

10.4.1 Overview of baseline

- 10.4.1.4 The area within which the Offshore Array will be situated is relatively homogeneous, characterised predominantly by sands with circalittoral fine sand or circalittoral muddy sand being the most common substrates (EMODnet data, 2021). Site specific geophysical data detail that the site is dominated by 'sand with gravel ripples and occasional mega ripples', with boulders being identified within the southwest corner of the Offshore Array (DONG, 2015).
- 10.4.1.5 The available site-specific geophysical data for the Offshore Array is presented in Figure 10.1 but does not cover the Offshore Electrical Connection Search Area. However, the EMODnet data (2021) indicates that the corridor is characterised predominantly by circalittoral coarse sediments. Figure 10.1 shows the predicted broad scale habitats across the Study Area wider region. These patterns are supported by sediment data reported in Howe, 2018 which are also shown in Figure 10.1.
- 10.4.1.6 Baseline information (Howe, 2018) indicates that the most prevalent habitat throughout the Offshore Array and Offshore Electrical Connection Search Area is sand and gravel substrates which support communities dominated by brittle stars, polychaetes, queen scallops, hydroids and hermit crabs. Furthermore, polychaete tubes were evident throughout (Howe, 2018). Brittle star beds have been identified as regionally important to the Isle of Man as well as an important biogenic habitat.
- 10.4.1.7 Less common habitats are found in deeper water where muddy substrates are characterised by the Norway lobster *Nephrops norvegicus*, polychaetes, and the anemone *Sagartia* (Howe, 2018). This habitat has predominantly been recorded in the north of the Offshore Array area, although it is present in the south of the Study Area. In more tide swept areas in the north of the Study Area, communities are dominated by the bryozoan *Alcyonidium diaphanum* and common starfish *Asterias rubens*.

Designated Sites

- 10.4.1.8 Several designated sites are located within proximity to or directly overlap the Study Area, including Marine Nature Reserves (MNRs), Marine Conservation Zones (MCZs) and Eelgrass Conservation Zones (ECZ) (Figure 10.1). The approach to potential for impacts on designated sites is further considered within the Transboundary Protected Sites Assessment Strategy and Screening (Annex 32.A).
- 10.4.1.9 The majority of the coastal waters surrounding the Isle of Man are designated as MNRs under the Wildlife Act (1990) with those closest to the Offshore Array area being Ramsey Bay MNR and Laxey Bay MNR (Figure 10.1). Ramsey Bay MNR, lying to the northeast, covers an area of 97 km² with water depths of up to 40 m. The site was designated in 2011 to protect a wide range of important marine habitats including Seagrass meadows, horse mussel reefs, maerl beds, kelp forests and brittlestar beds.
- 10.4.1.10 The Offshore Electrical Connection Search Area passes through the Douglas Bay MNR and the northern side of the Little Ness MNR (Figure 10.1). The Douglas Bay MNR contains important benthic ecological receptors including: rocky reefs, kelp forests, maerl beds and Beaumont's nudibranch (*Cumanotus beaumonti*). The Little Ness MNR provides habitat for important benthic ecological receptors, including horse mussel reef and maerl beds. The MNRs will be assessed further as part of a Protected Sites Assessment (a strategy for which is presented within Transboundary Protected Sites Assessment Strategy and Screening (Annex 32.A)
- 10.4.1.11 The West of Coastland MCZ lies in the eastern part of the Irish Sea region, immediately adjacent to the east of the Offshore Array area and covers an area of 158 km² (Figure 10.1). The West of Coastland MCZ is designated in UK waters under

the Marine and Coastal Access Act (2009), for the protection of the following benthic ecological features: subtidal sand, subtidal coarse sediment and subtidal mixed sediments.

10.4.2 Data sources

- 10.4.2.4 Several benthic subtidal and intertidal ecology datasets have been collated to inform this Chapter of the Scoping Report. A desktop review of publicly available data was undertaken, which included sources from nearby OWF developments, predominantly Morecambe, Mona, Morgan, Ormonde and Walney Extension OWFs, as well as applicable fisheries data, broadscale habitat data and literature. The datasets considered to be relevant to the Proposed Development are listed below in Table 10.1.
- 10.4.2.5 While there is extensive overlap with existing information, additional site-specific subtidal and intertidal surveys will be completed and reported on to provide comprehensive coverage of the Offshore Array area and Offshore Electrical Connection Search Area to inform a detailed baseline characterisation of the Proposed Development area.
- 10.4.2.6 A detailed characterisation of the benthic subtidal and intertidal communities within the Study Area and surrounding environment will be produced for the purposes of assessment, including through consultation and engagement via the Evidence Plan Process.

Table 10.1: Baseline Data Sources.

Source	Summary	Coverage of the Study Area
Mona Offshore Wind Project, Preliminary Environmental Information Report (PEIR): Volume 2, Chapter 7: Benthic subtidal and intertidal ecology (RPS, 2023a)	A project specific PEIR chapter outlining the benthic subtidal and intertidal ecological environment, drawing upon both desk-based studies and site-specific surveys.	Partial overlap with Study Area.
Morgan Offshore Wind Project: Generation Assets, PEIR: Volume 2, Chapter 7: Benthic subtidal and intertidal ecology (RPS, 2023b)	A project specific PEIR chapter outlining the benthic subtidal and intertidal ecological environment, drawing upon both desk-based studies and site-specific surveys.	Partial overlap with Study Area.
Morecambe OWF: Generation Assets: PEIR, Volume 1, Chapter 9, Benthic Ecology (Royal HaskoningDHV, 2023)	A project specific PEIR chapter outlining the benthic subtidal and intertidal ecological environment, drawing upon both desk-based studies and site-specific surveys.	Partial overlap with Study Area.
Ormonde Offshore Windfarm Year 2 Post Construction Benthic Monitoring Survey Technical Report (CMACS, 2014)	A post construction survey to monitor and characterise conditions and changes to the site-specific benthic environment.	Data coverage to the south of the Offshore Array and Offshore Electrical Connection Search Area. No direct coverage of the Proposed Development.
Walney Extension Offshore Windfarm (CMACS, 2013)	Baseline characterisation of subtidal habitats in relation to Walney Extension OWF.	Subtidal habitats 20 km east of array. No Direct

Source	Summary	Coverage of the Study Area
		coverage of the Proposed Development.
Seasearch Dives Isle of Man 2005-2012	Dive surveys covering from around coast of Isle of Man with data feeding into the National Biodiversity Network (NBN) biological records database.	Parts of the Offshore Array and Offshore Electrical Connection Search Area.
EMODnet broad-scale seabed habitat map of Europe (EUSeaMap, 2021)	Interactive map of benthic data and habitat maps.	Covers the entire Study Area.
Habitats Directive Annex I habitat maps	Habitat data from EMODnet Seabed Habitat maps that contains data on habitats described in Annex I of the EU's Habitats Directive.	Covers the entire Study Area.
Subtidal Ecology. In: Manx Marine Environmental Assessment (2nd Ed). (Howe, 2018)	Overview of existing knowledge of Manx subtidal habitats and ecology including assessment of species/ features of conservation importance (horse mussel beds, eelgrass beds, maerl and ocean quahog (<i>Arctica islandica</i>)).	Covers the entire subtidal Study Area.
Coastal Ecology. In: Manx Marine Environmental Assessment (2nd Ed). (Howe, 2018)	Overview of existing knowledge of Manx intertidal habitats and ecology including assessment of species/ features of conservation importance (horse mussel beds, eelgrass beds, maerl).	Covers the entire intertidal Study Area.
Horse Mussel Reef data provided by DEFA	Data showing the extent of horse mussel reef within the Little Ness MNR from 2018.	Covers Little Ness MNR.

10.4.3 Summary of key receptors

10.4.3.4 The key benthic subtidal and intertidal ecology receptors within the benthic subtidal and intertidal ecology Study Area are identified in Table 10.2 below.

Table 10.2: Summary of Key Receptors.

Key Receptor Summary	Key Receptor Biotopes
<i>Key receptors</i>	
Sandy sediments with low infaunal diversity and sparse epibenthic communities	SS.SCS.CCS.Nmix – <i>Neopentadactyla mixta</i> in circalittoral shell gravel or coarse sand
	SS.Ssa.IfSa.ScupHyd – <i>Sertularia cupressina</i> and <i>Hydrallmania falcata</i> on tide swept sublittoral sand with cobbles or pebbles
	SS.Smu.CsaMu.VirOphPMax – <i>Virgularia mirabilis</i> and <i>Ophiura</i> spp. With <i>Pecten maximus</i> on circalittoral sandy or shelly mud.
	SS.SmxCMxCloMx.Nem – <i>Cerianthus lloydii</i> with <i>Nemertesia</i> spp. And other hydroids in circalittoral muddy mixed sediment

Key Receptor Summary	Key Receptor Biotopes
Coarse and mixed sediments with moderate to high infaunal diversity	SS.SMx.CMx.OphMx – <i>Ophiothrix fragilis</i> and/ or <i>Ophiocomina nigra</i> brittlestar beds on sublittoral mixed sediment.
<i>Other key receptors protected within MNRs of importance to note</i>	
Maerl	SS. SMp.MrL.Pcal – <i>Phymatolithon calcareum</i> and robust red algae on infralittoral clean gravel or coarse sand; and SS. SMp.MrL.Pcal.Nmix – <i>Phymatolithon calcareum</i> maerl beds with <i>Neopentadactyla mixta</i> and other echinoderms in deeper infralittoral clean gravel or coarse sand.
Horse mussel (<i>Modiolus modiolus</i>)	
Ocean quahog (<i>Arctica islandica</i>)	
Norway lobster (<i>Nephrops norvegicus</i>)	
Kelp forests	
Subtidal seagrass meadows	

10.4.4 Further data collection to be undertaken

10.4.4.4 In order to supplement existing information and assist with the characterisation of the development site, further surveys will be undertaken which will provide site specific data describing the benthic habitats and biotopes. The surveys will include:

- Subtidal benthic sampling (including grab sampling, Drop Down Video (DDV) surveys) and habitat mapping which will be used to characterise the subtidal benthic environment and ground truth the interpretation of the geophysical data (DONG, 2015). Surveys will be undertaken in accordance with procedures detailed in the Marine Monitoring Handbook (JNCC, 2001).
- Intertidal benthic sampling including walk over survey and biotope mapping, the results of which will be used to characterise the intertidal habitats in the area of the landfall. Methodology will follow best practice guidance including the Countryside Council for Wales (CCW) Handbook for Marine Intertidal Phase I mapping surveys (Wyn *et al.*, 2006), Marine Monitoring Handbook (JNCC, 2001) and Common Standards Monitoring Guidance (JNCC, 2004).
- Subtidal and intertidal sediment sampling for physicochemical analysis which will inform the characterisation of sediment types and provide sediment contaminant data which, while primarily informing the water and sediment quality assessment, will also be used to inform the benthic ecology assessment. Sampling will be undertaken in accordance with the CEMP Guidelines for Monitoring Contaminants in Sediments (OSPAR, 2018).

10.4.5 Future baseline

10.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

10.5 Identification of impacts and effects

10.5.1 Key parameters for assessment

10.5.1.4 The benthic subtidal and intertidal scoping study is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- The construction of up to 100 Wind Turbine Generators (WTGs) on one of various foundation types with associated seabed preparation and scour protection and preparation;
- Up to five Offshore Substation (OSSs) on one of various foundation types within the Offshore Array with associated seabed preparation and scour protection;
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection;
- The regular maintenance of the infrastructure throughout the project lifespan; and
- Decommissioning of the site to remove all offshore infrastructure above the seabed.

10.5.2 Commitments

10.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to benthic subtidal and intertidal ecology are described in Table 10.3 below.

10.5.2.5 The need for commitments will also be dependent upon the findings of the site-specific benthic and intertidal surveys that will be completed across the extents of the Offshore Array area and along the Offshore Electrical Connection Search Area.

Table 10.3: Relevant commitments to Subtidal and Intertidal Ecology.

ID	Measure proposed	How this measure will be secured	Rationale
Co1	Development of, and adherence to, an INNS Management Plan.	Consent condition(s).	To limit the introduction and/or spread of INNS.
Co2	Development of, and adherence to, an Asset Installation & Protection Plan (AIPP) detailing the quantities and installation methods for subsea infrastructure, informed by the Cable Burial Risk Assessment.	MIC condition.	To inform judgements on required cable burial depth, ensuring cable burial where possible while limiting the potential for cable exposure and minimising the amount of seabed disturbance required and minimising habitat loss and disturbance.

ID	Measure proposed	How this measure will be secured	Rationale
Co3	Cable burial will be the preferred method of cable protection, however where burial is not possible, requirements for additional cable protection will be determined through consultation with the relevant stakeholder.	MIC condition.	To ensure project infrastructure is sufficiently protected from exposure, and to limit the effects of Electro-Magnetic Fields (EMF) on sensitive ecological receptors.
Co4	Development of, and adherence to, a MPCP addressing the risks, methods and procedures for dealing with any offshore spills and/or pollution events.	MIC condition.	To minimise the potential for anthropogenic pollution inputs into the marine environment.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project in order to minimise benthic habitat loss/ disturbance/ modification and potential release of contaminants.
Co7	Development and implementation of a Project Impact Monitoring & Mitigation Programme (PIMMP).	MIC condition.	To set out environmental monitoring during the pre-construction, construction, post-construction and O&M phases.

10.5.3 Approach to assessment of likely significant effects

10.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on benthic subtidal and intertidal ecology at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

10.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application, incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

10.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 10.3 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;

- The evidence for effects on benthic subtidal and intertidal ecology based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified benthic subtidal and intertidal ecology lead.

10.6 Proposed approach to the EIA

10.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on benthic subtidal and intertidal ecology associated with the Proposed Development that have (or do not have) the potential to result in LSE.

10.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 10.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 10.7.3.

10.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

10.6.1.7 For benthic subtidal and intertidal ecology, the assessment of impacts will also follow specific guidance. This is further detailed within section 10.7.3 below.

10.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

10.7 Post Scoping

10.7.1 Overview

10.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For benthic subtidal and intertidal ecology, the scoping study has identified:

- Two impacts which have the potential to result in No LSE; and
- Nine impacts which have the potential to result in LSE.

10.7.2 No LSE and next steps

10.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process in the form of a note detailing the particle motion effects and EMF effects on benthic receptors, providing a summary of the literature and evidence to date, alongside examples from other projects. It is anticipated that this note will

be provided to the Biological subgroup of the Offshore Environment Technical Advisory Group (TAG) during Q4 2023.

10.7.3 LSE and next steps

Supporting Studies

- 10.7.3.4 The assessment for benthic subtidal and intertidal ecology will draw upon the sediment plume modelling work that will be undertaken within the physical processes assessment (Chapter 7, Marine Geology, Oceanography & Physical Processes), since changes to physical processes have the potential to impact benthic subtidal and intertidal ecology receptors directly or indirectly.

Assessment Methodology

- 10.7.3.5 The EIA will assess the potential impacts on benthic subtidal and intertidal ecology identified in the Impacts Register (Annex 5.B).
- 10.7.3.6 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 10.7.3.7 In addition to the general approach detailed in Chapter 5, EIA Methodology, the assessment of impacts on benthic subtidal and intertidal ecology will also follow the following guidance documents listed in section 10.2.4.
- 10.7.3.8 The EIA will consider the potential impacts of the construction, operational and maintenance and decommissioning phases of the Proposed Development within the benthic subtidal and intertidal ecology Study Area. The EIA methodology will consider the most recent CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (2018) and EPA (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- 10.7.3.9 For subtidal and intertidal ecology, the magnitude of an impact is defined by the extent, duration, frequency, probability and consequences of the impact and the resulting significance of the 'effects' upon benthic receptors, with a definition of significance then provided.
- 10.7.3.10 The sensitivity of subtidal and intertidal ecology receptors will be determined by reference to the Marine Evidence based Sensitivity Assessment (MarESA) where possible. The sensitivity assessment of the species will consider the current status of the species, and its importance (locally, regionally, nationally or internationally). Information on the sensitivities of benthic ecology receptors will largely be drawn from the Marine Evidence based Sensitivity Assessment (MarESA) (Tyler-Walters *et al.*, 2018). The MarESA is a database which has been developed through the Marine Life Information Network (MarLIN) of Britain and Ireland and is maintained by several organisations, including the Marine Biological Association (MBA) and other statutory organisations in the UK. This database comprises a detailed review of available evidence on the effects of pressures on marine species or habitats, and a subsequent scoring of sensitivity against a standard list of pressures based on benchmarked levels of effect.
- 10.7.3.11 For the purposes of undertaking the EIA, marine habitats and species identified as having the potential to occur in the benthic subtidal and intertidal ecology Study Area will be grouped into broad habitat/ community types. These broad habitat/ community types will serve as the Important Ecological Features (IEFs) against which impacts associated with the construction, operational and maintenance and decommissioning phases of the Proposed Development will be assessed. Habitats with similar physical and biological characteristics (including species composition and richness/ diversity) as well as conservation status/ interest will be grouped together for the purpose of the EIA.

- 10.7.3.12 Consideration will also be given to the inherent sensitivities of different habitats in assigning the groupings, such that habitats and species with similar vulnerability and recoverability, often as a result of similar broad sediment types and species complements, will be grouped together. Impacts on IEFs will be described in terms of the magnitude of that impact and correlated against the sensitivity of each IEF to each impact, to produce a statement of significance.
- 10.7.3.13 The evidence base presented in the MarESA is peer reviewed and represents the largest review undertaken to date on the effects of human activities and natural events on marine species and habitats. It is considered to be one of the best available sources of evidence relating to recovery of benthic species and habitats.
- 10.7.3.14 Further detail of how sensitivity is defined is outlined in Tyler-Walters *et al.* (2018). Sensitivities to the key activities across the Proposed Development lifetime (i.e., construction, operation and decommissioning phases) will be summarised according to the MarESA for each of the biotopes within the benthic subtidal and intertidal ecology Study Area. Where sensitivity information on specific biotopes are not available through the MarESA, suitable proxies will be used.
- 10.7.3.15 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on benthic subtidal and intertidal ecology receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 10.7.3.16 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on benthic subtidal and intertidal ecology receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

10.8 Questions to Consultees

- Question 10.1: Do you agree with the Study Area that has been identified for benthic subtidal and intertidal ecology?;
- Question 10.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 10.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 10.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to benthic subtidal and intertidal ecology?; and
- Question 10.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

11 Marine Mammals

11.1 Introduction

- 11.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to marine mammals and megafauna from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on marine mammal and megafauna receptors.
- 11.1.1.2 Marine mammals include cetaceans (whales, dolphins and porpoises) and pinnipeds (seals). Other megafauna considered include sea turtles, however for ease of reading, this Chapter refers to 'marine mammals' hereafter.
- 11.1.1.3 Basking sharks are considered alongside other fish species in Chapter 12, Fish & Shellfish Ecology.
- 11.1.1.4 This topic interfaces with other topics and, as such, should be considered alongside:
- Chapter 7, Marine Geology, Oceanography & Physical Processes, which further explains potential changes in water current, sediment movement and levels;
 - Chapter 8, Marine Water & Sediment Quality, which provides further assessment of accidental pollution, increased concentration of suspended solids and the leaching of toxins;
 - Chapter 10, Benthic, Subtidal & Intertidal Ecology, which assesses the possible effects on prey resources and habitat; and
 - Chapter 12, Fish & Shellfish Ecology, which assesses the possible effects on prey resources and habitat.

11.2 Legislation, policy and guidance

- 11.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
- 11.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 11.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to

marine mammals. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

11.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

11.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

11.2.2 Legislation

National legislation

- The Wildlife Act 1990, as amended by The Agricultural (Miscellaneous Provisions) Act 2008, and including the Manx Marine Nature Reserves (Designation) Order 2018 - All marine mammals are protected against intentional killing, injuring, disturbance and taking under Schedule 5 of the Wildlife Act 1990, along with their shelter and protection from damage or destroy. The protection is further strengthened by the Agricultural (Miscellaneous Provisions) Act 2008. Inshore marine nature reserves (MNRs) for local cetacean and pinniped species were also designated under Section 32(1) of this Act, or as per Manx Marine Nature Reserves (Designation) Order 2018.

International legislation and agreements

- The Convention on the Conservation of Migratory Species of Wild Animals (the 'Bonn Convention') - This Convention extends to the Isle of Man as one of the signatory nations. It aims to conserve endangered migratory species and their habitats through multilateral agreements and management. The leatherback turtle (*Dermochelys coriacea*), most likely encountered turtle species in Manx waters, is listed under Appendix I. Forty-four cetacean species and six pinniped species are listed under Appendix II of the Bonn Convention, including the North and Baltic Sea populations of harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*), Risso's dolphin (*Grampus griseus*), short-beaked common dolphin (*Delphinus delphis*); the Baltic population of grey seal (*Halichoerus grypus*), and the Baltic and Wadden Sea populations of harbour seal (*Phoca vitulina*).
- The Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') - The Isle of Man is a signatory to this Convention via the UK. It aims to ensure conservation and protection of wild plant and animal species and their natural habitats. Thirty cetacean species are listed under Annex II, including the harbour porpoise, bottlenose dolphin, short-beaked common dolphin, Risso's dolphin, and minke whale (*Balaenoptera acutorostrata*) that are frequently sighted in Manx waters. All other cetacean species, grey seal and harbour seal, are listed under Annex III. All five sea turtle species are listed under Annex II.
- The Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention') - The Isle of Man is a signatory to this Convention via the UK. Contained within the OSPAR Convention are a series of Annexes, with Annex V focusing on the protection and conservation of the

ecosystems and biological diversity of the maritime area. The most relevant species to this section that are listed on the OSPAR Convention are the harbour porpoise and leatherback turtle.

- The CBD and the Aichi Biodiversity Targets - The 'Aichi' biodiversity targets has five strategic goals, with Strategic Goal B aiming to reduce direct pressures on biodiversity and promote sustainable use.
- EU Directive 2008/56/EC – Marine Strategy Framework Directive - MSFD sets out measures for Good Environmental Status (GES) in the marine environment. Descriptors relevant to this technical assessment include:
 - Descriptor 1 – Biodiversity (Birds, Mammals, Reptiles, Fish, Cephalopods, Pelagic Habitats); and
 - Descriptor 11 – Underwater noise.

11.2.3 Policy

National policy

- The Isle of Man's First Biodiversity Strategy 2015-2025 - One key strategic aim of this Plan is to manage biodiversity changes to minimise loss of species and habitats, through ways such as reducing potential impacts on marine wildlife. Biodiversity action plans are being formulated for harbour and grey seals by groups of technical specialists and experts.
- The Isle of Man Strategic Plan 2016 - Environment Policy 4 sets out that development will not be permitted which would adversely affect species and habitats of local, national or international importance.

11.2.4 Guidance

International guidance

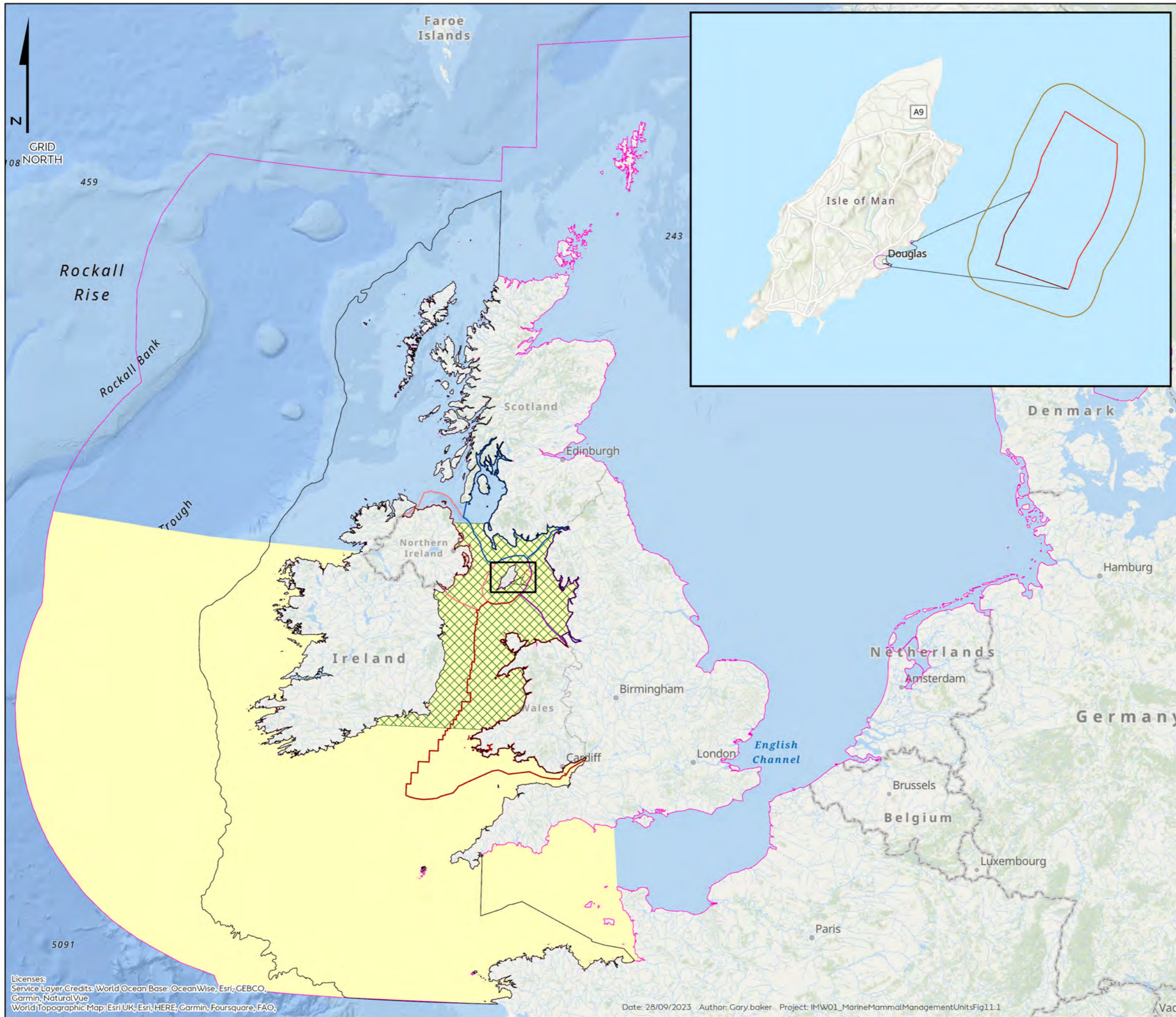
- Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects (Southall *et al.*, 2019) - This peer-reviewed publication is commonly used in assessments to provide information on functional hearing groups of marine mammals. The authors present auditory thresholds at which underwater noise levels can cause a temporary threshold shift (TTS) in hearing, meaning hearing is temporarily affected, or a permanent threshold shift (PTS) in hearing, meaning hearing is permanently affected. These values are typically used in conjunction with underwater noise modelling to assess the effect on species at the individual and population level.
- 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. (National Marine Fisheries Service (NMFS), 2018) - This document provides voluntary technical guidance for assessing the effects of underwater anthropogenic sound on the hearing of marine mammal species under the jurisdiction of the NMFS. Specifically, it identifies the received levels, or thresholds, at which individual marine mammals are predicted to experience TTS and PTS for acute, incidental exposure to underwater anthropogenic sound sources.

- ASA S3/SC1.4 TR-2014 Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report prepared by ANSI-Accredited Standards Committee S3/SC1 and registered with ANSI (Popper *et al.*, 2014) - This book chapter presents values and likelihood of effect at which underwater noise levels can cause mortality, TTS, PTS, masking (reduction in the detectability of a given sound (signal) as a result of the simultaneous occurrence of another sound (noise)) and behavioural changes in sea turtles and fish. These values are typically used in conjunction with underwater noise modelling to assess the effect on species at the individual and population level.
- The protection of Marine European Protected Species from injury and disturbance: Guidance for marine area in England and Wales and the UK offshore marine area (June 2010 Version) (Joint Nature Conservation Committee (JNCC), Natural England and Countryside Council for Wales, 2010) - This advice and guidance relates to regulations prohibiting the deliberate and reckless capture, injury, killing, and disturbance of marine European Protected Species (EPS), which include all cetacean and sea turtle species. Although seals are Manx protected species but not EPS, the commitment measures outlined in this document can also be applied to reduce the risk of impacts to seals (and other marine species).
- JNCC guidelines for minimising the risk of injury to marine mammals from piling noise (JNCC, 2010b) - This set of mitigation measures offers guidance on reducing risk of injury to marine mammals during pile driving. If followed, risk of injury is likely to be greatly reduced. The guidelines are split by survey planning, mitigation, and reporting. The mitigation protocols recommended for marine mammals are also likely to be appropriate for sea turtles.
- JNCC guidelines for minimising the risk of disturbance and injury to marine mammals whilst using explosives (JNCC, 2010a) - This set of mitigation measures aim to reduce risk of injury to marine mammals during detonation of unexploded ordnance and the use of other explosives. If followed, risk of injury is likely to be greatly reduced. The guidelines are split by survey planning, mitigation, and reporting. The mitigation protocols recommended for marine mammals are also likely to be appropriate for sea turtles.
- Guidance on the Offence of Harassment at Seal Haul-out Sites (Marine Scotland, 2014) - Section 117 of Marine Scotland Act 2010 makes it an offence to intentionally harass seals at haul-out sites in Scotland. The document provides guidance as to what this may entail and advises on what appropriate actions should be taken if harassment is reported. This guidance assists with the licensing process in relation to harassment and provides advice on how to behave responsibly around haul-out sites.
- The Wildlife Safe (WiSe) Scheme for boat operators (the WiSe Scheme, 2018) - The WiSe scheme delivering training and accreditation to boat operators has been adopted in Isle of Man to strengthen the Wildlife Act 1990. WiSe has developed Codes of Conduct to promote safe and sustainable watching of marine mammals and basking sharks.

11.3 Study Area

11.3.1.4 In view of the high level of mobility, and variation in foraging distances and seasonal distribution of marine mammals, two Study Areas will be defined for the purposes of baseline characterisation and are illustrated in Figure 11.1.

- **The site-specific Study Area:** this Study Area for marine mammal assessment encompasses:
 - The Offshore Array (illustrated in Figure 11.1);
 - A 4 km buffer extending around the Offshore Array surveyed by the site-specific DAS; and
 - A Zol around the Proposed Development with extent subject to results of underwater noise modelling post-scoping.
- **Regional Study Areas:** baseline characterisation will consider marine mammal ecology, behaviour, abundance, and distribution of species within the appropriate Management Unit (MU) for cetaceans and pinnipeds. An MU typically refers to a geographical area in which the animals of a particular species are found, to which management of human activities is applied.
 - The assessment of MUs for cetaceans will enable consideration of the scale of movement and population structure for each species (Inter-agency Marine Mammal Working Group (IAMMWG), 2023);
 - For grey and harbour seals, the Study Area is defined by haul-out preference regions presented in Carter *et al.* (2022), and consideration of the Seal Management Units (SMUs) from UK waters, as determined by the Special Committee on Seals (SCOS, 2021). Both haul-out preference regions and SMUs are based on expert knowledge of seal ecology, using the most pragmatic approach to management of seals without inferring discrete populations; and
 - The Regional Study Area for sea turtles is based upon the OSPAR Region III: Celtic Seas (OSPAR, 2022), in view of the wide-ranging distribution of sea turtles throughout the region.



Moor Vannin

Figure 11.1
Marine Mammal Study Area

- Site-Specific Marine Mammal Study Area
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Regional Study Areas**
- Leatherback Turtles - OSPAR Region III Celtic Seas
- Common Dolphin/Minke Whale/Risso's Dolphin - Celtic and Greater North Seas Management Unit
- Bottlenose Dolphin - Irish Sea Management Unit
- Harbour Porpoise - Celtic & Irish Sea Management Unit
- Grey Seal & Harbour Seal Management Units**
- Northern Ireland
- Northwest England
- Southwest Scotland
- Wales



Coordinate System: ETRS 1989 UTM Zone 30N

Scale@A3: 1:6,100,000

0 75 150 300 Kilometres

0 35 70 140 Nautical Miles

REV	REMARK	DATE
1	First issue	28/09/2023

Title: Marine Mammal Study Area
Document no: IMW01_Fig11.1
Created by: CBA
Checked by: RMc
Approved by: SB



Licenses:
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Garmin, NaturalVue
World Topographic Map: Esri UK, Esri, HERE, Garmin, Foursquare, FAO,

11.4 Baseline

11.4.1 Overview of baseline

11.4.1.4 An initial desk-based literature review has identified the key data sources, listed in Table 11.1 to inform the EIA. Full characterisation of the site, in terms of marine mammals, will follow the Evidence Plan Process, and will be informed by results of the 24-month DAS campaign carried out between August 2021 and July 2023.

Cetaceans

11.4.1.5 Twenty-six cetacean species have been recorded throughout the broader Irish Sea area (IWDG, 2023; NBDC, 2022a; NBDC, 2022b). Among these, ten cetacean species have been confirmed as recorded in the waters of the Isle of Man (Howe, 2018a); of these, five species regularly occur in Manx waters. These are harbour porpoise, Risso's dolphin, minke whale, bottlenose dolphin and short-beaked common dolphin (Hammond *et al.*, 2021; Howe, 2018a).

Seals

11.4.1.6 Two seal species (grey seal and harbour seal) regularly occur in the Irish and Celtic Seas (SCOS, 2021). The grey seal is more common than the harbour seal in Manx waters, where important grey seal haul-out sites are located off the Calf of Man, The Sound, Langness and Maughold Head (Howe, 2018b).

Sea turtles

11.4.1.7 Five species of sea turtles have been recorded throughout the Northeast Atlantic region (Morel *et al.*, 2018). Of these, the leatherback turtle is the most common species and the only regularly encountered in British, Irish and Manx waters (Botterell *et al.*, 2020).

Designated sites

11.4.1.8 Eight of ten MNRs in Manx waters are relevant to the protection of cetacean species, including Baie ny Carrickey MNR, Calf and Wart Bank MNR, Port Erin Bay MNR, Niarbyl Bay MNR, Laxey Bay MNR, Langness MNR, Douglas Bay MNR and West Coast MNR. Further consideration of the approach to the assessment of designated sites is given in Chapter 32, Protected Sites Assessment Strategy (PSA).

11.4.1.9 Five MNRs in Manx waters have been designated for the protection of seal species, including the Calf and Wart Bank MNR, Ramsey Bay MNR, Niarbyl Bay MNR, Langness MNR, and West Coast MNR. Further details on the above sites and a list of designated sites in neighbouring territories will be provided via the Evidence Plan Process.

11.4.2 Data Sources

Table 11.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
<i>Cetaceans</i>		
Whales, dolphins & porpoises in Manx Waters. In: Manx Marine Environmental Assessment (1.1 partial update) (Howe, 2018a)	This Chapter gives an overview of the spatial and temporal patterns of cetacean occurrences in Manx waters.	Partial coverage of Regional Study Areas

Source	Summary	Coverage of the Study Area
Atlas of cetacean: distribution in north-west European waters (Reid <i>et al.</i> , 2003)	This report collates land-, vessel- and aerial-based marine mammal sightings in the North-East Atlantic region, including Irish and Celtic Seas.	Partial coverage of Regional Study Areas; full coverage of the Marine Mammal Study Area
Revised Phase III Data Analysis of Joint Cetacean Protocol Data Resource JNCC Report No. 517 (Paxton <i>et al.</i> , 2016)	This JNCC report estimates spatio-temporal abundance for seven cetacean species around the British Isles and the island of Ireland, from 1994 to 2010	Partial coverage of Regional Study Areas; full coverage of the Marine Mammal Study Area
Cetaceans in Manx Waters in 2021 – Manx Whale and Dolphin Watch (Mandley, 2021)	This annual report summarises the boat- and land-based sightings made along the Isle of Man coastline and in Manx waters.	Partial coverage of Regional Study Areas; full coverage of the Marine Mammal Study Area
Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the Small Cetacean Abundance in the North Sea (SCANS)-III aerial and shipboard surveys (Hammond <i>et al.</i> , 2021)	Aerial- and boat-based surveys were conducted in 2018 to provide large-scale estimates of small cetacean abundance in European Atlantic waters, including for the harbour porpoise, bottlenose dolphin, Risso’s dolphin, common dolphin, and minke whale.	Partial coverage of Regional Study Areas; full coverage of the Marine Mammal Study Area
'European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)'. Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018 Conservation status assessment for the species: S1351 - Harbour porpoise (<i>Phocoena phocoena</i>) (JNCC, 2019)	This document represents the UK Report on the conservation status of the harbour porpoise, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.	Partial coverage of Regional Study Areas; full coverage of the Marine Mammal Study Area
Aerial surveys of cetaceans and seabirds in Irish waters: Occurrence, distribution and abundance in 2015-2017 (Rogan <i>et al.</i> , 2018)	This report presents the occurrence, distribution and abundance of cetaceans and seabirds in Irish waters based on visual aerial survey data.	Partial coverage of Regional Study Areas
Seals		
Marine Mammals - Seals. In: Manx Marine Environmental Assessment (2 nd edition) (Howe, 2018b)	This Chapter gives an overview of the sighting and stranding records, and the distribution and pup counts at haul-out sites around the Isle of Man.	Partial coverage of Regional Study Areas
Scientific Advice on Matters Related to the Management of Seal Populations: 2021 (SCOS, 2021)	These reports collate findings on seal density, abundance and breeding to identify any conservation and management issues, including ecology, behaviour, population	Full coverage of Regional Study Areas

Source	Summary	Coverage of the Study Area
Scientific Advice on Matters Related to the Management of Seal Population: 2020 (SCOS, 2020)	trends and estimates, important areas and the status of both grey and harbour seals in the UK.	
Sympatric Seals, Satellite Tracking and Protected Areas: Habitat-Based Distribution Estimates for Conservation and Management (Carter <i>et al.</i> , 2022)	This journal article provides estimates of at-sea distribution for both grey and harbour seals from haul-outs in the British Isles. The predictions are based on regional models of habitat preference.	Full coverage of Regional Study Areas
<i>Sea turtles</i>		
OSPAR Assessment Portal: State Assessment 2022 – Leatherback turtle (OSPAR, 2022)	This status assessment summaries the range, distribution, abundance estimates for leatherback turtles in the Northeast Atlantic region, with identifying potential threats, knowledge gaps and measures addressing key conservation pressures.	Entire Regional Study Areas
Annex 1 to Initial Assessment : Marine Environment. EU Project Grant No: EASME/EMFF/2015/1.2.1.3/03/SI2.742089. Supporting Implementation of Maritime Spatial Planning in the European Northern Atlantic (SIMNORAT) (Morel <i>et al.</i> , 2018)	This report is centred on the Marine Strategy Framework Directive ‘Good Environmental Status’ Descriptor 1, and aims to identify specific ecological characteristics, including the distribution, abundance and ecology of marine turtle species recorded throughout the Northern European Atlantic.	Partial coverage of Regional Study Areas
Jellyfish aggregations and leatherback turtle foraging patterns in a temperate coastal environment (Houghton <i>et al.</i> , 2006)	This study employed aerial surveys to map jellyfish and identified the relationship between leatherback turtle distribution and jellyfish aggregation in the northeast Atlantic.	Partial coverage of Regional Study Areas
Long-term insights into marine turtle sightings, strandings and captures around the UK and Ireland (Botterell <i>et al.</i> , 2020)	This paper presents the spatial and temporal occurrence of marine turtles in the UK and Ireland between 1910 and 2018.	Partial coverage of Regional Study Areas
British & Irish Marine Turtle Strandings & Sightings Annual Report 2020 (Penrose and Westfield, 2023)	This report collates and provides information on the sighting and stranding records of sea turtle species in the British Isles and Ireland throughout 2012-2022.	Partial coverage of Regional Study Areas
Sea Turtles in Manx Waters. In: Manx Marine Environmental Assessment (2nd Ed) (Howe, 2018c)	This Chapter gives an overview of turtle sighting and stranding records in Manx waters.	Partial coverage of Regional Study Areas

11.4.3 Summary of key receptors

11.4.3.4 The key marine mammal receptors identified to be included in the assessment are:

- Harbour porpoise;
- Risso’s dolphin;

- Bottlenose dolphin;
- Common dolphin;
- Minke whale;
- Grey seal;
- Harbour seal; and
- Leatherback turtle.

11.4.3.5 The approach to the assessment of designated sites in Isle of Man waters is considered separately in Chapter 32, Protected Sites Assessment Strategy. Designated sites in transboundary territories of other nations are considered within the Transboundary Protected Sites Assessment Strategy and Screening (Annex 32.A).

11.4.4 Further data collection to be undertaken

11.4.4.4 Completion of the DAS for marine mammals, image processing and analysis will be reported through the Evidence Plan Process and in the ES as part of the baseline characterisation.

11.4.5 Future baseline

11.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

11.5 Identification of impacts and effects

11.5.1 Key parameters for assessment

11.5.1.4 The marine mammals scoping is based on the construction, operation and maintenance, and decommissioning of the following project infrastructure:

- An array consisting of up to 100 wind turbine generators (WTGs) potentially on 18 m diameter monopile foundations;
- Up to five Offshore Substations (OSSs), each potentially mounted on piled jackets using up to 16 pin piles per foundation, with a pin pile diameter of 3.5 m, or monopile foundations;
- Vessel operations associated with the construction and operation of the offshore elements of the Proposed Development.

11.5.1.5 The LSE are expected to originate primarily from works-associated underwater noise and vessel operations.

11.5.2 Commitments

11.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to marine mammals are described in Table 11.2 below.

Table 11.2: Relevant commitments to marine mammals.

ID	Measure proposed	How this measure will be secured	Rationale
Co3	Cable burial will be the preferred method of cable protection, however where burial is not possible, requirements for additional cable protection will be determined through consultation with the relevant stakeholder.	MIC condition.	To ensure project infrastructure is sufficiently protected from exposure, and to limit the effects of EMF on sensitive ecological receptors.
Co4	Development of, and adherence to, a MPCP addressing the risks, methods and procedures for dealing with any offshore spills and/or pollution events.	MIC condition.	To minimise the potential for anthropogenic pollution inputs into the marine environment.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co7	Development and implementation of a Project Impact Monitoring & Mitigation Programme (PIMMP).	MIC condition.	To set out environmental monitoring during the pre-construction, construction, post-construction and O&M phases.
Co16	Application for Protected Species Licences to be made to DEFA in respect of works affecting protected species under the Wildlife Act 1990.	MIC condition.	Actions which affect protected species must be licensed to comply with the relevant legislation.
Co34	The use of 'low order' techniques (such as deflagration) where practicable for the clearance of UXO, should UXO be encountered.	MIC condition.	To minimise effects associated with clearance of UXO.

11.5.3 Approach to assessment of likely significant effects

- 11.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on marine mammals at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.
- 11.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.
- 11.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 11.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on marine mammals based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified marine mammals lead.

11.6 Proposed approach to the EIA

11.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on marine mammals associated with the Proposed Development that have (or do not have) the potential to result in LSE.

11.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 11.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 11.7.3.

11.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

11.6.1.7 For marine mammals, the assessment of impacts will also follow specific guidance. This is further detailed within section 11.7.3 below.

11.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

11.7 Post-scoping

11.7.1 Overview

11.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For marine mammals, the scoping study has identified:

- Two impacts which have the potential to result in No LSE; and
- Ten impacts which have the potential to result in LSE.

11.7.2 No LSE and next steps

11.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process in the form of a note detailing the literature and evidence to

date on the potential for effects of EMF and operational noise levels from turbines on marine mammal receptors, alongside examples from other projects. It is anticipated that this note will be provided to the Biological subgroup of the Offshore Environment Technical Advisory Group (TAG) during Q4 2023.

11.7.3 LSE and next steps

Supporting studies

- 11.7.3.4 Impacts from underwater noise are the primary concern for marine mammals. Underwater noise models will be used to predict the extent and magnitude of noise levels at the Proposed Development site for piling works and potential UXO clearance.
- 11.7.3.5 The latest literature on noise exposure criteria for marine mammals (Southall *et al.*, 2019) and auditory sensitivity of leatherback turtles (Popper *et al.*, 2014) will be used to determine where thresholds for TTS and PTS, the latter of which is often considered to be auditory injury, are surpassed. For marine mammals, the assessment of TTS and PTS will be based on both the cumulative sound exposure level (SEL_{cum}) and peak sound pressure level (peak SPL). The SEL_{cum} criterion predicts frequency-weighted received sound levels across a 24-hour period and the peak SPL criterion uses unweighted sound levels. Noise propagation model outputs can be overlaid with marine mammal density estimates to predict the number of marine mammals likely to be disturbed, and the number in which TTS and PTS onset occurs.
- 11.7.3.6 A PSA process will run in parallel with the EIA. During this process, proximity of designated sites whereby marine mammal species are a designated feature will be considered in relation to the species-specific Regional Study Areas. The PSA Strategy is detailed in Chapter 32, with consideration of transboundary designated sites in Annex 32.A.

Assessment Methodology

- 11.7.3.7 The EIA will assess the potential impacts on marine mammals identified in the Impacts Register (Annex 5.B).
- 11.7.3.8 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 11.7.3.9 In addition to this general approach, the assessment of impacts on Marine Mammals will also follow guidance documents listed in 11.2.4 that are specific to this topic.
- 11.7.3.10 Magnitude refers to the scale of an impact and will be determined on a quantitative basis, where possible. This may relate to the area of habitat lost to the development footprint in the case of a habitat feature or predicted loss of individuals in the case of a marine mammal or sea turtle population. The impact will be assigned a value from one of four levels – high, medium, low or negligible – where ‘high’ is given to effects that will irreversibly alter the population in the short-to-long-term and alter the long-term viability of the population, while ‘negligible’ is given where there will be a very slight change in the size or distribution of the population that is rapidly reversible following cessation of the development activity.
- 11.7.3.11 The sensitivity of marine mammals and sea turtles to potential impacts will be determined subjectively based on species’ ecology and behaviour. Judgement will take account of information available on the responses of marine mammals and sea turtles to various stimuli (e.g. underwater noise and visual disturbance, existing offshore wind farms) where such information exists, and whether their ecology makes them vulnerable to potential impacts (e.g. species that have high sensitivity to underwater noise). The receptor will be assigned a value from one of four levels – high, medium, low or negligible – where ‘high’ is given to species with very limited

tolerance of, and 'negligible' to species that are generally tolerant of, sources of disturbance, such as noise, prey disturbance and vessel movements.

- 11.7.3.12 Assessment of impacts on marine mammals and sea turtles will utilise both project-specific and publicly available data (see Table 11.1), which will be consulted upon during the EPP. Consultation will be held with relevant organisations and as part of the EPP. Key consultees for the marine mammal and sea turtles impact assessment include the members of the Offshore Environment Technical Advisory Group (TAG) of the Evidence Plan Process. These include DEFA, Manx Wildlife Trust (MWT) and Manx Whale and Dolphin Watch (MWDW).
- 11.7.3.13 Impacts that have been identified as having a potential LSE will be assessed in the ES, including direct and indirect impacts. Direct impacts include those resulting in effects on marine mammals or sea turtles from interactions with activity associated with the Proposed Development, such as underwater noise from pile driving or UXO clearance, or vessel movements. Indirect impacts are those created through an impact pathway, resulting in (for example) changes to habitat, which could affect foraging or breeding opportunities. Assessments will be based on a precautionary approach.
- 11.7.3.14 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on marine mammal receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 11.7.3.15 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on marine mammal receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

11.8 Questions to Consultees

- Question 11.1: Do you agree with the Study Area that has been identified for marine mammals?;
- Question 11.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 11.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 11.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to marine mammals?;
- Question 11.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 11.6: Do you agree that all key marine mammal species to be scoped into the assessment have been identified?;
- Questions 11.7: Do you agree with the approach of defining two types of Study Areas (i.e. Marine Mammal Study Area, and the species-specific Regional Study Areas), as a more comprehensive way to characterise the baseline condition and assess potential impacts of activities associated with the Proposed Development? If the answer is no, please provide alternative way(s) for better definition of Study Area(s);
- Question 11.8: When are the Biodiversity Action Plans (BAPs) due to be published for harbour and grey seal?

12 Fish & Shellfish Ecology

12.1 Introduction

- 12.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to fish and shellfish ecology from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on fish and shellfish ecology receptors.
- 12.1.1.2 Fish and shellfish ecology is the study of demersal and pelagic populations and communities that reside within the water column and on, in or near the seabed. As such, due to the Proposed Development impinging on the seafloor and creating other impacts (such as underwater noise as a result of piling) below the sea surface, development of the offshore elements of the Proposed Development has the potential to impact on these habitats and communities.
- 12.1.1.3 This Chapter has close links with, and should therefore be read alongside, the following Chapters:
- Chapter 7, Marine Geology, Oceanography & Coastal Processes – considers the changes to coastal processes that have the potential to impact fish and shellfish receptors directly or indirectly;
 - Chapter 10, Benthic Subtidal & Intertidal Ecology - considers the benthos which some fish and shellfish receptors rely upon and therefore there is a degree of overlap between these topics; and
 - Chapter 13, Commercial Fisheries – considers the commercial effects of impacts on fish and shellfish ecology. Of paramount importance to the commercial fisheries assessment is the findings of the fish and shellfish ecology assessment. The fish and shellfish assessment will consider species at a stock level, while the commercial fisheries assessment considers the geographic scale based on fishing grounds at a more local level. The fish and shellfish ecology and commercial fisheries technical experts will liaise with each other to ensure the potential effects of disruption to commercially exploited fish and shellfish resources are robustly and appropriately assessed.

12.2 Legislation, policy and guidance

- 12.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- 12.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and

Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 12.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to fish and shellfish ecology. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 12.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 12.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

12.2.2 Legislation

National legislation

- Wildlife Act 1990 – this is the main piece of Manx legislation relating to the protection of the Isle of Man’s fauna and flora. The provisions are broadly the same as those of the Wildlife and Countryside Act (WCA) 1981 (as amended) in England and Wales. The Act sets out schedules of Manx species of animal and plant that are protected by law from injury or disturbance. It also establishes the legal protection of Areas of Special Scientific Interest (ASSI) and National Nature Reserves (NNR), as well as other site designations. It also provides for the conservation of marine and coastal habitats through site protection and species protection;
- Fisheries Act 2012 - this provides supervision and protection of inland and sea fisheries, and fosters the establishment and development of such fisheries; and
- Water Pollution Act 1993 – this enshrines in law several international conventions that the Isle of Man is a signatory to: Oslo Paris Convention (OSPAR), London, ASCOBANS and the CBD all of which have priorities that aim to reduce marine pollution.

International legislation and agreements

- The Convention for the Protection of the Marine Environment of the North East Atlantic (the OSPAR Convention) requires signatories to protect the marine environment from human impacts, conserve ecosystems, and where practicable, restore impacted marine areas.

12.2.3 Policy

National policy

- Isle of Man Strategic Plan 2016 – this sets out an Island-wide policy framework and general policies for the development of and use of land within the Isle of Man and marine environment within the Isle of Man’s jurisdiction. If a development could have a significant environmental effect, then an EIA is required. The criteria

for judging significance include locations within environmentally sensitive locations.

- Managing our Natural Wealth' – The Isle of Man Biodiversity Strategy 2015-2025 - this strategy sets out how government, business and people can conserve and enhance nature. The strategic aims are:
 - Managing biodiversity changes to minimise loss of species;
 - Maintaining, restoring and enhancing native biodiversity, where necessary; and
 - Involving society in understanding, appreciating and safeguarding biodiversity.

12.2.4 Guidance

National guidance

- Manx Marine Environmental Assessment (Howe, 2018) – contains guidance on what considerations should be given with regard to future development.

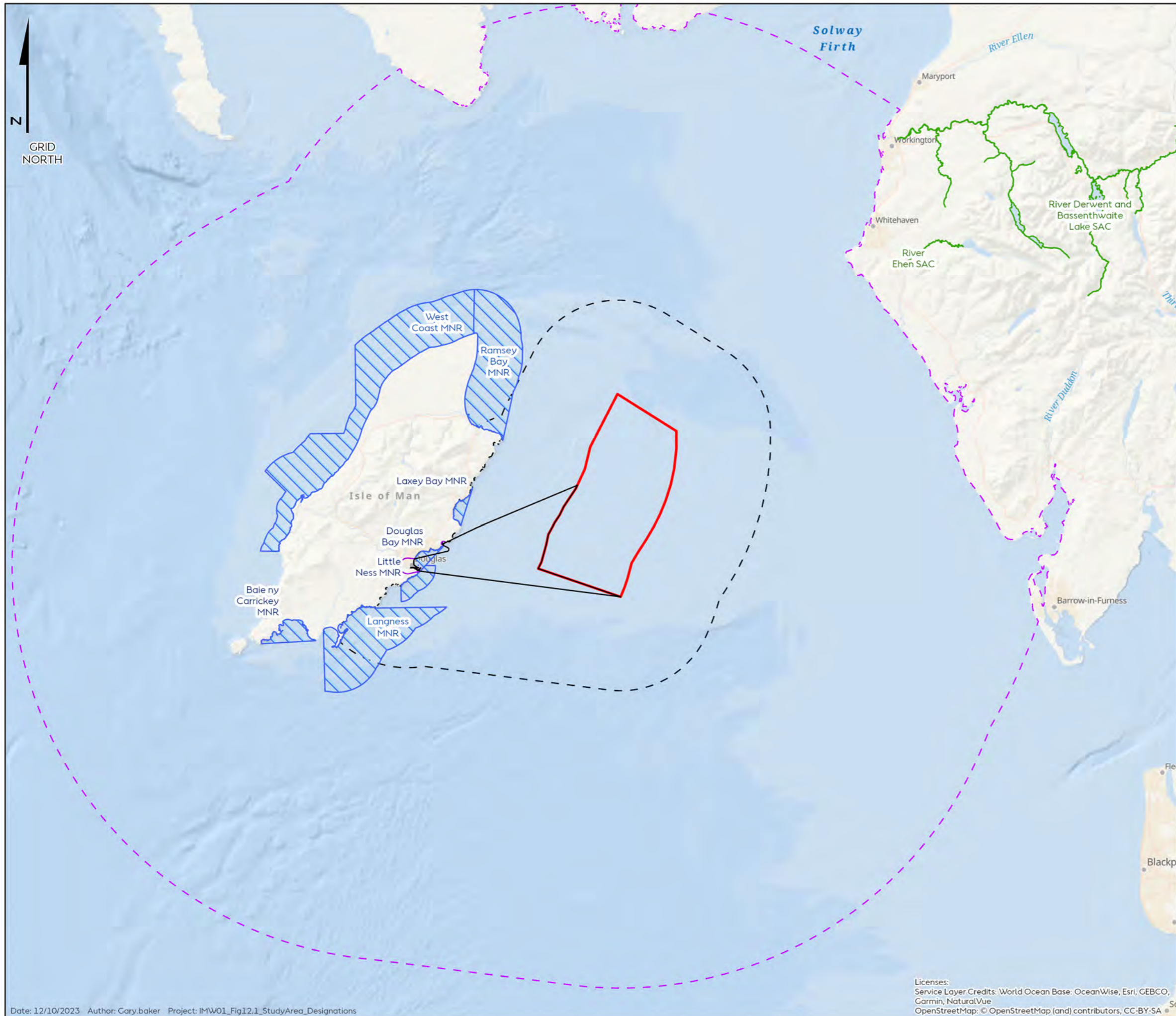
International guidance

- Sensitivity of features based upon the Marine Evidence-based Sensitivity Assessment (MarESA) framework where possible (Tyler-Walters *et al.*, 2018);
- Guidelines for EIA in Britain and Ireland. Marine and Coastal, Final Document (CIEEM, 2018); and
- Guidance note for EIA in respect of FEPA and CPA requirements (Centre for Environment, Fisheries and Aquaculture (Centre for Environment, Fisheries and Aquaculture Science (Cefas), 2004).

12.3 Study Area

- 12.3.1.4 The Study Area for fish and shellfish ecology is presented in Figure 12.1 and has been defined at three spatial scales.
- 12.3.1.5 For primary impacts, such as permanent and/ or long-term habitat loss/ alteration due to the addition of infrastructure to the area, only the footprint of the Offshore Array and the Offshore Electrical Connection Search Area is considered.
- 12.3.1.6 For impacts associated with the transport of suspended sediments, the Sedimentary Zol has been identified and is a wider Zol, encompassing the area over which suspended sediment might travel following disturbance as a result of the Proposed Development. The Sedimentary Zol provides a buffer around the Proposed Development, as defined by the mean spring tidal excursion which represents the expected maximum distance that suspended sediments may be transported on a mean spring tide in a flood and/ or ebb direction (although most suspended sediments are expected to be deposited much closer to the disturbance activity). This has been determined as the extent of the spring tidal excursion, between 8 and 11.5 km (ABPmer, 2008) resulting in the adoption of a precautionary buffer of 12 km from the Offshore Array and Offshore Electrical Connection Search Area. This is illustrated in Figure 12.1.
- 12.3.1.7 For impacts associated with underwater noise, the Underwater Noise Zol has been identified and relates to underwater noise resulting from percussive piling in the Offshore Array. Underwater noise modelling has not yet been undertaken for the Proposed Development. However, taking the maximum impact ranges as informed

by underwater noise modelling for recent OWF projects (such as Awel y Mor, Mona and Morgan OWFs), a 50 km Zol for underwater noise impacts is deemed suitably precautionary for the Proposed Development. The Underwater Noise Zol is shown in Figure 12.1.



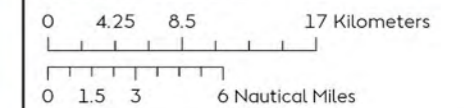
Moor Vannin

Figure 12.1
Fish and Shellfish Ecology
Study Area and Designations

- Sedimentary Zone of Influence
- Underwater Noise Zone of Influence
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Special Area of Conservation
- Marine Nature Reserve



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:480,000



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12.4 Baseline

12.4.1 Overview of baseline

12.4.1.4 A collation of the baseline environment data is provided below. A detailed baseline characterisation of the fish and shellfish communities within the Study Area will be completed for the purposes of assessment and presented within a position paper that will be provided to the Biological Subgroup and Fisheries Subgroup of the Offshore Environment Technical Advisory Group (TAG) and will be consulted upon via the Evidence Plan Process.

Fish and shellfish assemblages

12.4.1.5 Several nearby offshore wind farms, namely Morecambe, Mona, Morgan, Burbo Bank Extension, Ormonde, Walney Extension and Celtic Array have previously conducted various pre and post construction surveys (such as otter and beam trawls) to identify local fish assemblages. Assemblages identified across the various OWF surveys were largely comparable, with assemblages largely consisting of plaice, dab, dragonet, whiting, grey gurnard (*Eutrigla gurnardus*), sprat, herring, tub gurnard (*Trigla lucerna*) and poor cod.

12.4.1.6 Of the shellfish identified during the existing OWF surveys, the surveys recorded compositions predominantly composed of Nephrops, queen scallop, common whelk (*Buccinum undatum*), edible crab (*Cancer pagurus*), velvet crab (*Necira puber*), brown shrimp (*Crangon crangon*), octopus (*Eledone cirrhosa*) and mussels (*Mytilus edulis*).

12.4.1.7 Northern Irish Groundfish Surveys (NIGFS) conducted in 2022, within the surrounding areas of the Isle of Man recorded over 50 fish and shellfish species, with the most abundant species being whiting, followed by herring, plaice, small spotted dogfish (*Scyliorhinus canicula*) and mackerel. Other frequently identified species included; sprat, poor cod (*Trisopterus minutus*), Nephrops, dab (*Limanda limanda*), dragonet (*Callionymus lyra*) and queen scallop (*Aequipecten opercularis*). Notable species recorded also included: broadnose skate (*Bathyraja brachyurops*), rough skate (*Leucoraja naevus*), thornback ray (*Raja clavata*) and spotted ray.

12.4.1.8 The 2020 and 2021 NIGFS both predominantly identified small spotted dogfish during the surveys. Similarly, during both years, species recorded were most consistently followed by; plaice, whiting, herring, nephrops, thornback ray, sprat and queen scallop. These findings are comparable to the recordings from 2022.

Spawning and nursery grounds

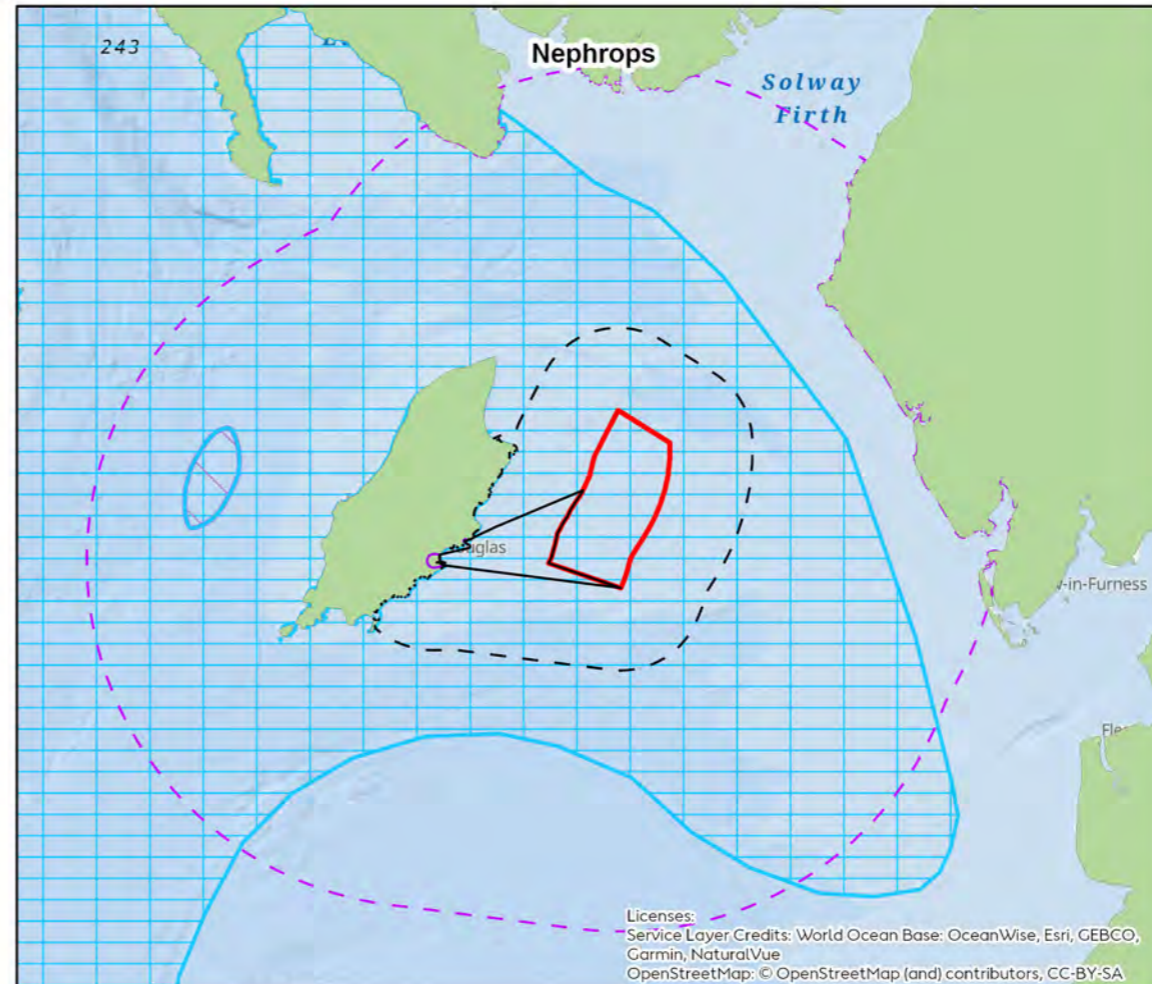
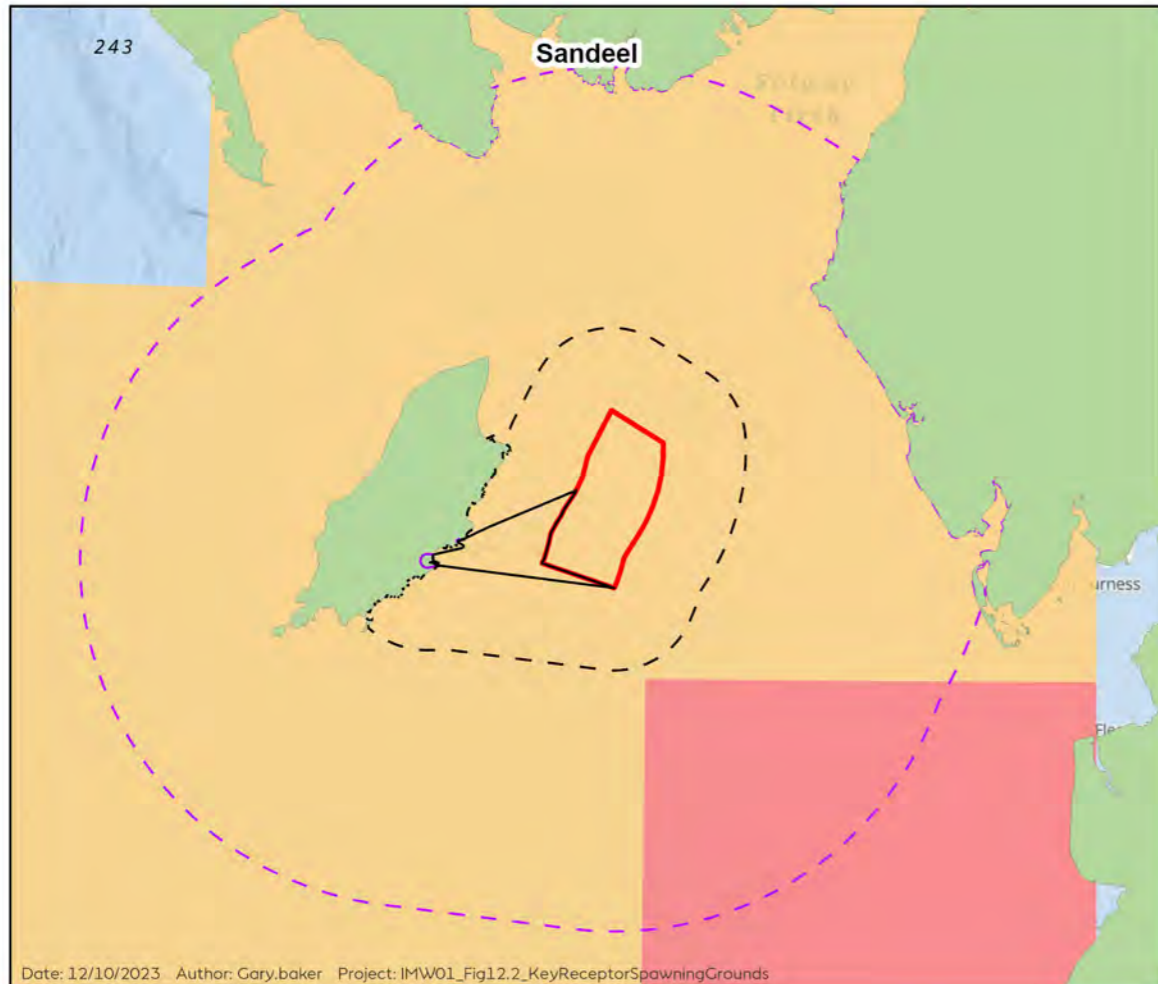
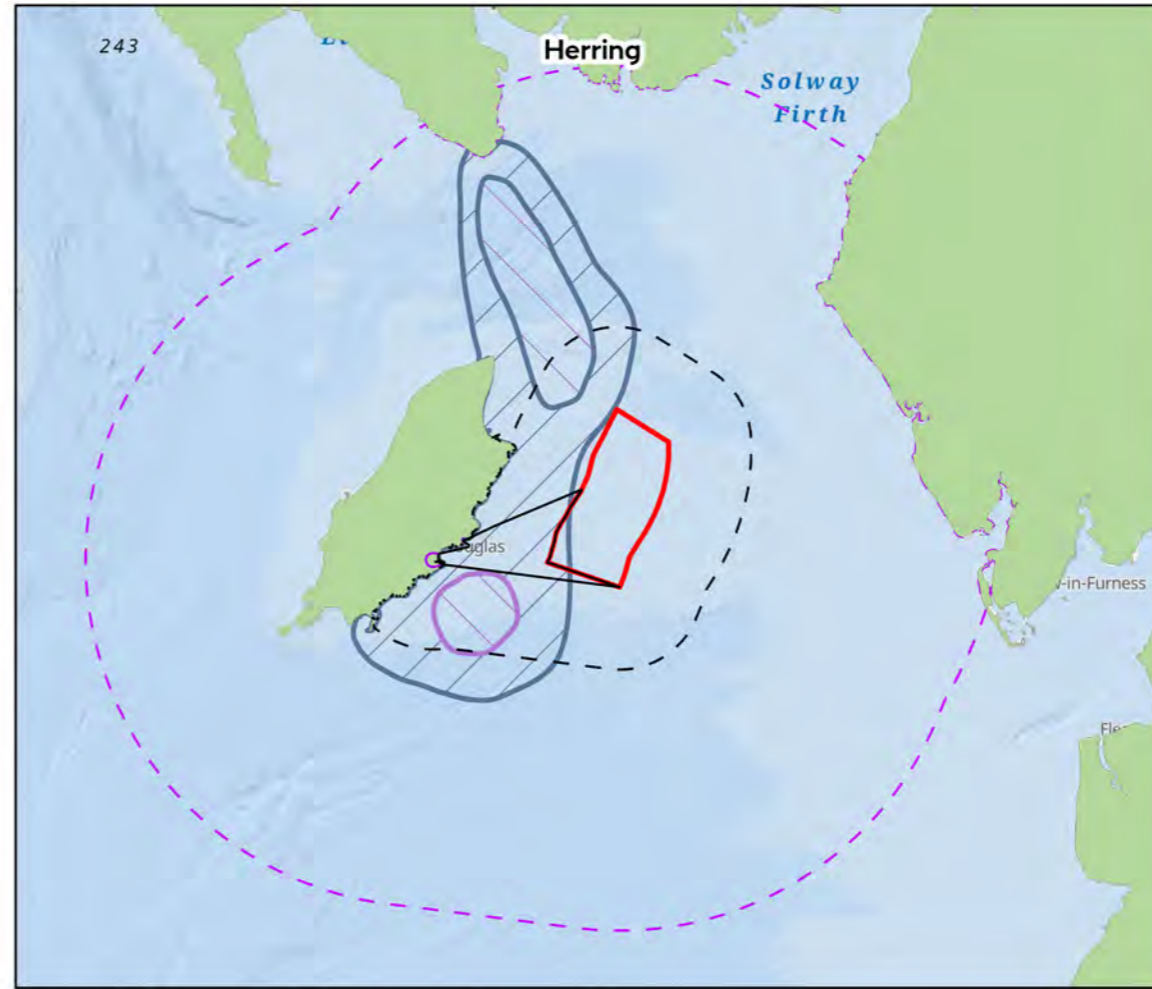
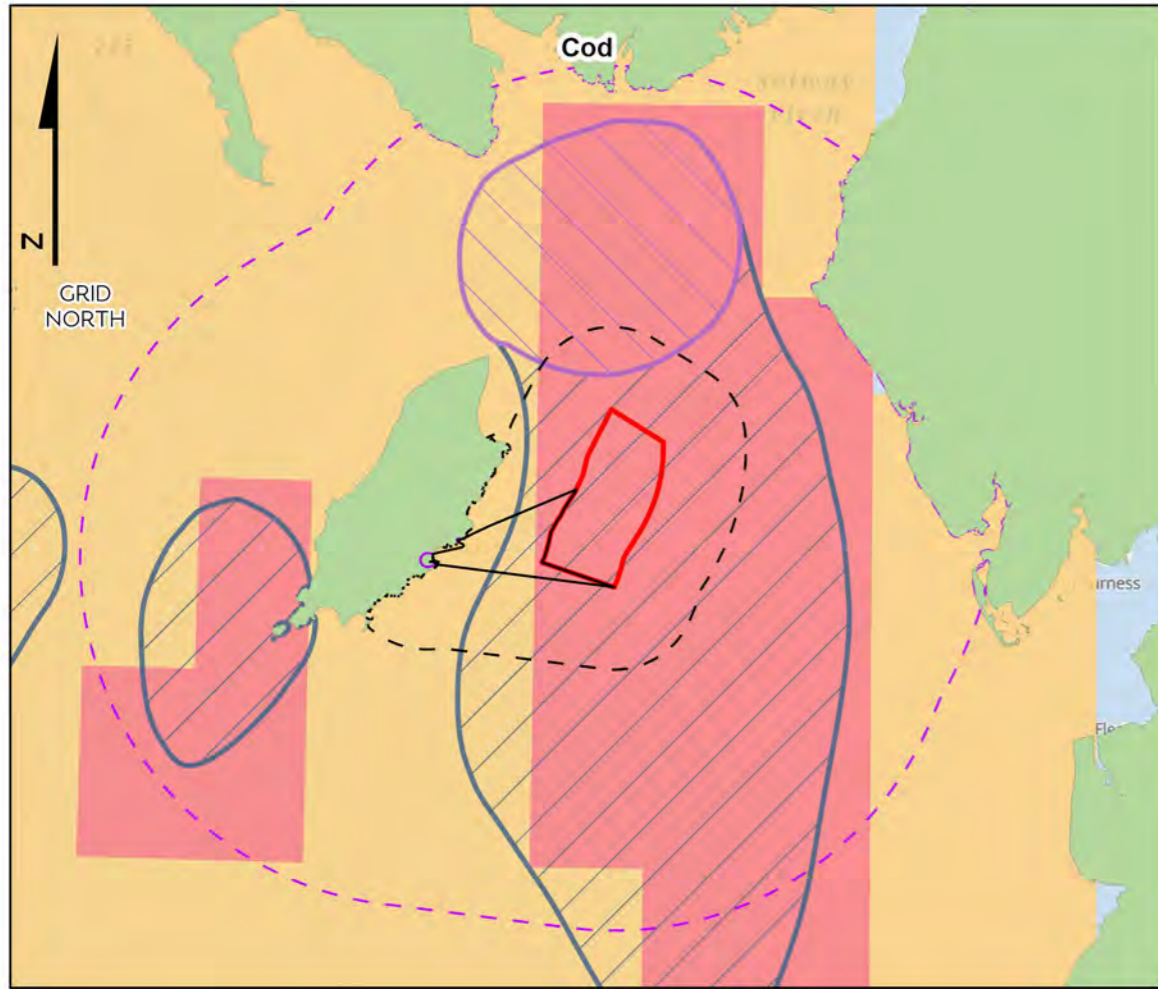
12.4.1.9 Several species of fish and shellfish are known to have either spawning or nursery grounds in relatively close proximity to, or overlapping the Study Area (Coull *et al.*, 1998; Ellis *et al.*, 2010).

12.4.1.10 High intensity spawning grounds for plaice (*Pleuronectes platessa*), cod (*Trisopterus luscus*), sandeel (*Ammodytes marinus*) and sole (*Solea solea*) overlap with the Study Area. Low intensity spawning grounds for whiting (*Merlangius merlangus*), ling (*Molva molva*), hake (*Merluccius merluccius*), mackerel (*Scomber scombrus*) and horse mackerel (*Trachurus trachurus*) also overlap with the Study Area. A discrete, historic spawning ground for herring (*Herrangus herrangus*) is also located within the Study Area (Figure 12.2; with spawning occurring between August and September), as well as spawning grounds for sprat (*Sprattus sprattus*), nephrops (*Nephrops norvegicus*) and lemon sole (*Microsomus kitt*) (Coull *et al.*, 1998). With the exception of herring and lemon sole, the species with spawning grounds identified all extend across much of the eastern Irish Sea and wider areas.

12.4.1.11 High intensity nursery grounds for spurdog (*Squalus acanthias*), herring, whiting, cod and sole overlap with the Study Area (Figure 12.3). The cod nursery grounds extend

across the whole eastern Irish Sea and in a broader context along most of the Northern Irish Sea. High intensity herring nursery grounds extend around the entire northern UK, and the Northern Irish Sea. Topeshark (*Galeorhinus galeus*), spotted ray (*Raja montagui*), anglerfish (*Lophiiformes*) and sand eel all have low intensity nursery grounds that overlap with the Study Area (Ellis *et al.*, 2010). Nursery grounds for haddock (*Merlanogrammus aeglefinus*), lemon sole and nephrops are also present within the Study Area (Coull *et al.*, 1998).

12.4.1.12 The key spawning and nursery grounds identified are presented spatially relative to the Isle of Man Study Area below in Figure 12.2 and Figure 12.3 below.



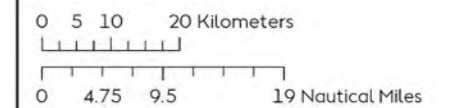
Moor Vannin

Figure 12.2
Spawning Grounds Relative to the Proposed Development

- Sedimentary Zone of Influence
- Underwater Noise Zone of Influence
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Spawning Grounds (Ellis et al., 2010) - Intensity**
- Higher
- Lower
- Spawning Grounds (Coull et al., 1998) - Intensity**
- Higher
- Lower
- Undetermined



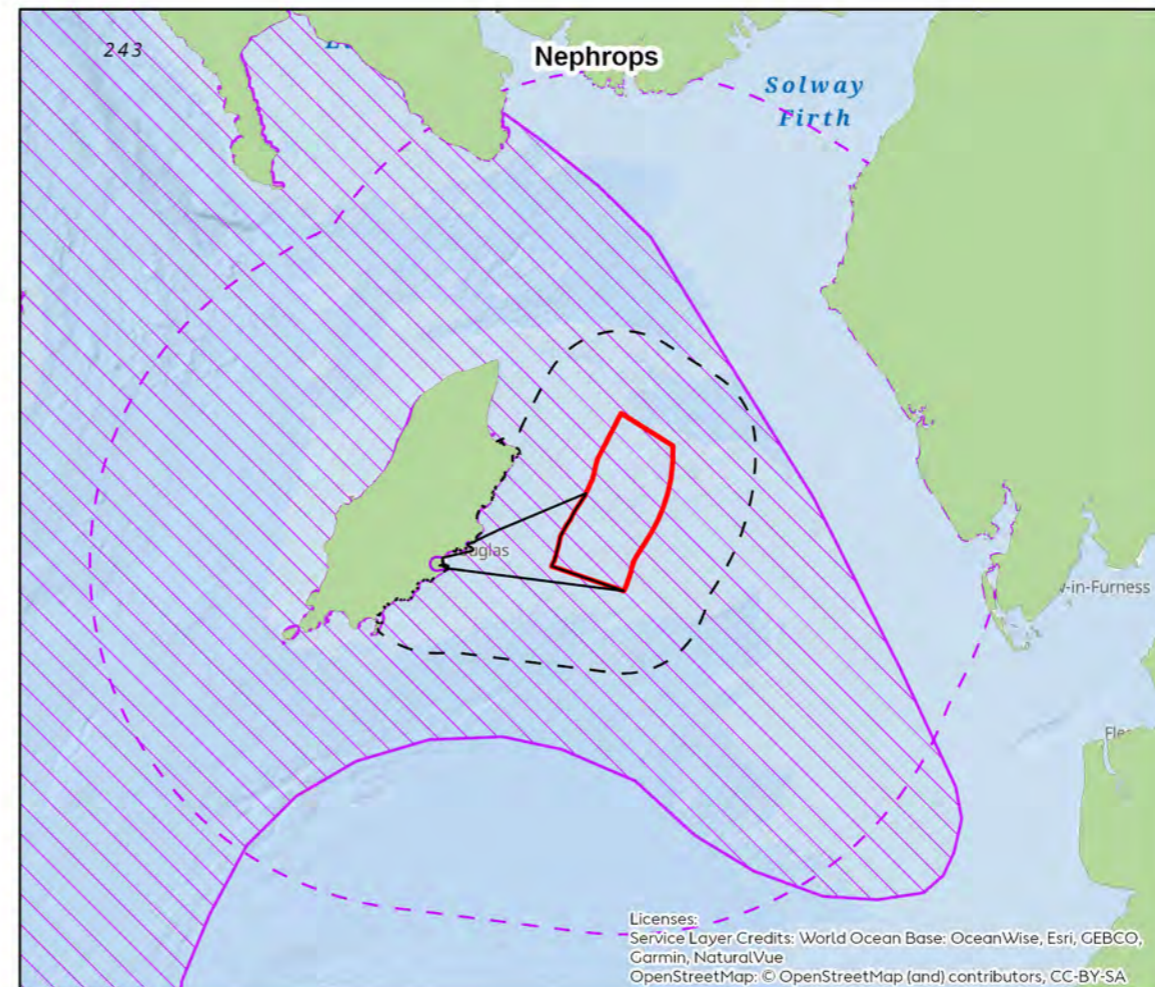
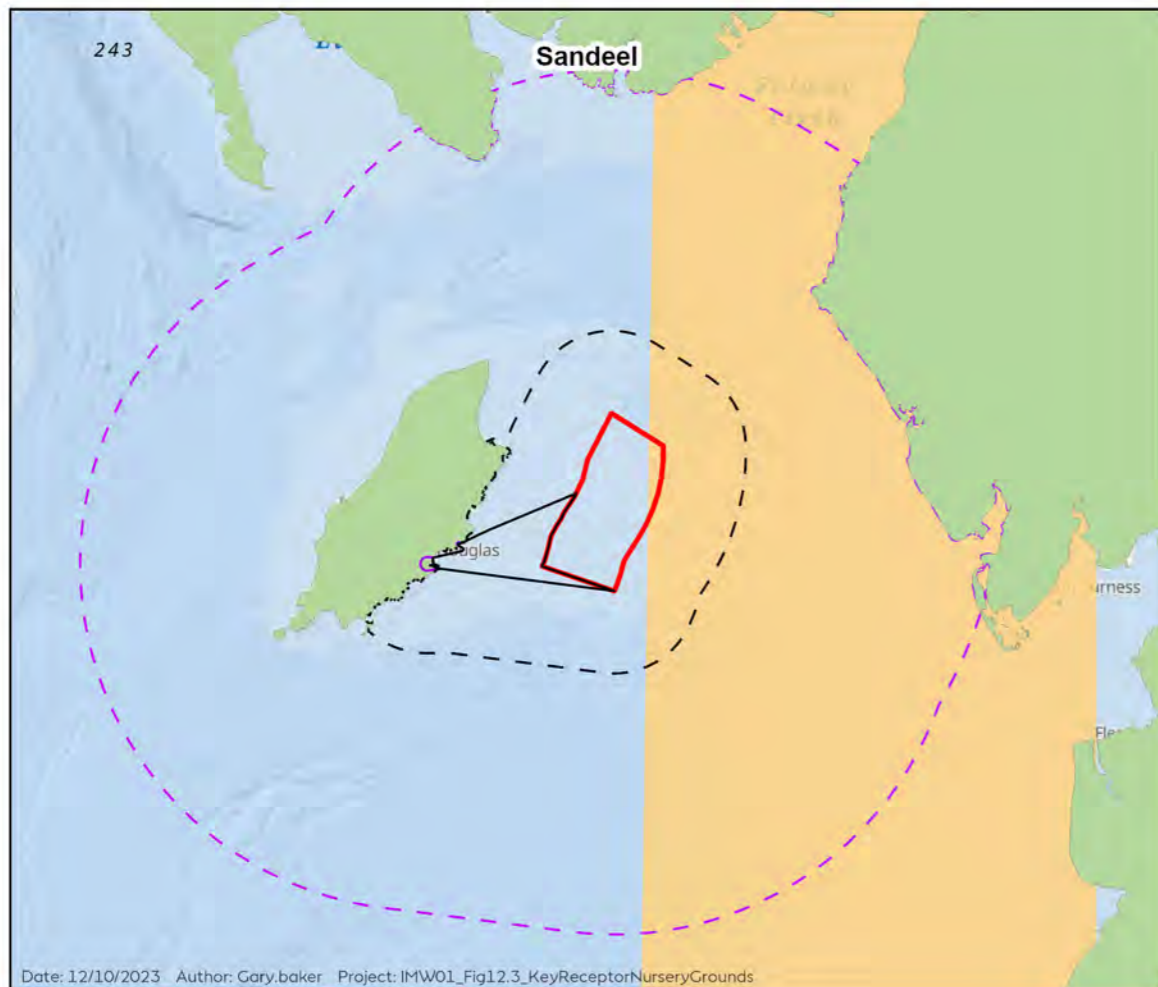
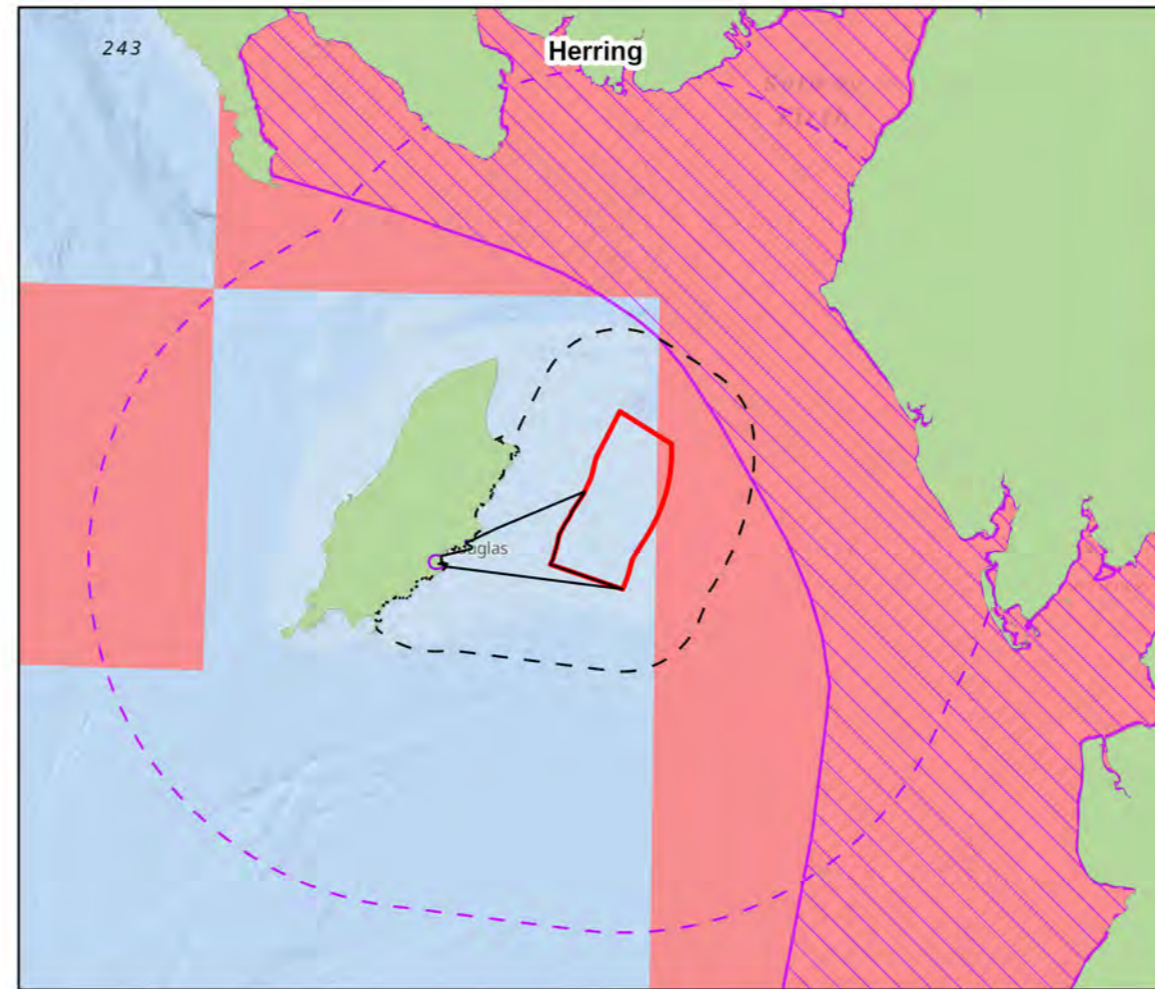
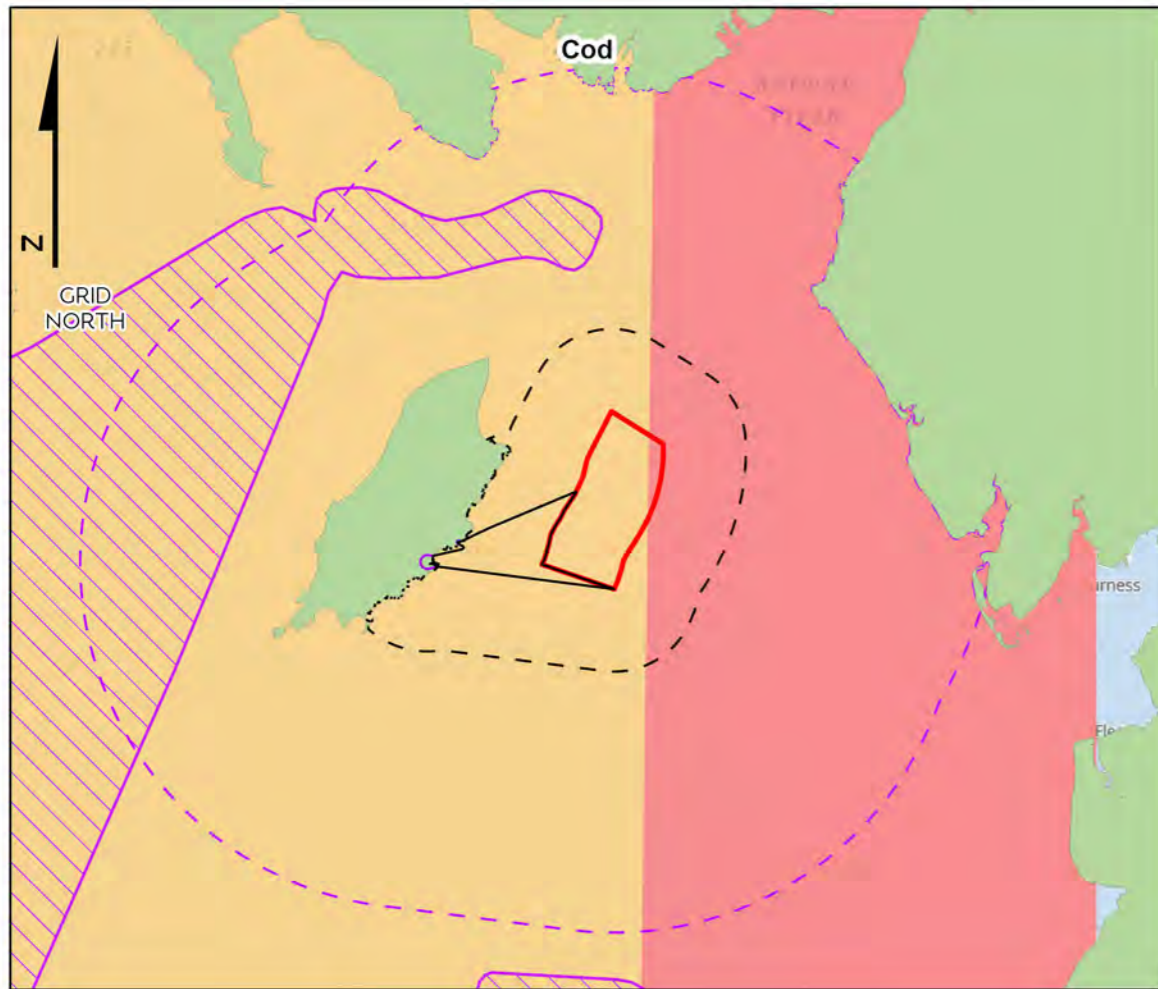
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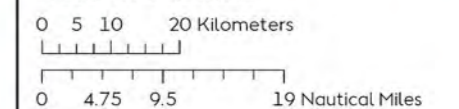
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Figure 12.3
Nursery Grounds Relative to the Proposed Development

- Sedimentary Zone of Influence
- Underwater Noise Zone of Influence
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Nursery Grounds (Ellis et al., 2010) - Intensity**
- Higher
- Lower
- Nursery Grounds (Coull et al., 1998)



Coordinate System: ETRS 1989 UTM Zone 30N
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Main Title: Nursery Grounds
Document no: IMW01_Fig12.3
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Designated sites

- 12.4.1.13 Several designated sites are located within the Study Area, including Marine Nature Reserves (MNRs) and Special Areas of Conservation (SACs). The strategy for the assessment of potential for impacts on designated sites within the Isle of Man Territorial Seas is further discussed within Chapter 32, Protected Sites Assessment Strategy. Considerations of designated sites that fall outside of the Isle of Man Territorial Seas can be found within the Transboundary Protected Sites Assessment Screening (Annex 32.A)
- 12.4.1.14 Within the Study Area, the following MNRs have been identified: Laxey Bay, Ramsey Bay, Douglas Bay, Little Ness, Lang Ness, Baie Ny Carrickey and West Coast (Figure 12.1). These sites are designated under the Wildlife Act (1990) for various fish and shellfish species, including: Atlantic salmon (*Salmo salar*), Iceland clam (*Artica islandica*), masked crab (*Corystes cassivelaunus*), sea trout (*Salmo trutta trutta*), European eel (*Anguilla anguilla*), spiny scallop (*Chlamys hastata*), basking shark (*Cetorhinus maximus*), dog whelk (*Nucella lapillus*) and blue mussel (*Mytilus edulis*).
- 12.4.1.15 The River Derwent and Bassenthwaite Lake and the River Ehen SACs fall within the Study Area. These designated sites are presented spatially relative to the Study Area in Figure 12.1 and are considered separately in the Transboundary Protected Sites Assessment Screening (Annex 32.A). These SACs contain designated fish and shellfish features: Freshwater pearl mussel (*Margaritifera margaritifera*); Sea lamprey (*Petromyzon marinus*), River lamprey (*Lampetra fluviatilis*) and Brook lamprey (*Lampetra planeri*).

12.4.2 Data sources

- 12.4.2.4 A number of fish and shellfish ecology datasets have been collated to inform this Chapter of the Scoping Report. A desktop review of publicly available data was undertaken, which included sources from nearby OWF developments, predominantly Morecambe, Mona, Ormonde, Walney Extension, Burbo Bank Extension, Rhyl Flats and Celtic Array OWFs, as well as applicable fisheries data and literature. These sources provide a regional context to the fish and shellfish communities expected to be present in the Irish Sea and are listed below in Table 12.1.

Table 12.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Morgan Offshore Windfarm Preliminary Environmental Information Report (PEIR): Volume 2, Chapter 8: Fish and Shellfish Ecology (RPS, 2023a).	Presents the assessment of the potential impact of the Morgan Offshore Windfarm Project on fish and shellfish ecology. Sets out the findings of the EIA to the date of the PEIR publication.	Data coverage to the south of the Offshore Array area and Offshore Electrical Connection Search Area. Direct overlap with the Study Area.
Morecambe Offshore Windfarm PEIR: Volume 1, Chapter 10: Fish and Shellfish Ecology (Royal HaskoningDHV, 2023)	Provides an overview of the existing fish and shellfish ecology characterisation within the Morecambe Offshore Windfarm. The PEIR also considers the potential effects of the Project on fish and shellfish ecology.	Data coverage to the south of the Offshore Array area and Offshore Electrical Connection Search Area. No direct coverage of the Study Area.
Mona Offshore Windfarm PEIR: Volume 1, Chapter 8:	Presents the assessments of the potential impact of the Mona Offshore Windfarm Project on fish and	Data coverage to the south of the Offshore Array area

Source	Summary	Coverage of the Study Area
Fish and Shellfish Ecology (RPS, 2023b)	shellfish ecology. Sets out the findings of the EIA to the date of the PEIR publication.	and Offshore Electrical Connection Search Area. No direct coverage of the Study Area.
Burbo Bank Extension Adult and Juvenile Fish Characterisation Surveys (BMM, 2011)	Otter and beam trawl sampling undertaken to assess juvenile and adult fish populations within and in the immediate vicinity of Burbo Bank Extension.	Data coverage to the south of the Offshore Array area and Offshore Electrical Connection Search Area. No direct coverage of the Study Area.
Rhyl Flats Offshore Windfarm Beam Trawl Survey Report (CMACS, 2005)	2005 beam trawl survey at the Rhyl Flats Offshore Wind Farm.	Data coverage to the south of the Offshore Array area and Offshore Electrical Connection Search Area. No direct coverage of the Proposed Development.
Ormonde Offshore Windfarm Year 2 Post Construction Benthic Monitoring Survey Technical Report (CMACS, 2014)	Post construction beam and otter trawl surveys conducted across the Ormonde Offshore Windfarm	Data coverage to the southeast of the Offshore Array area and Offshore Electrical Connection Search Area. Direct overlap with the Study Area.
Walney Extension Offshore Windfarm Environmental Statement Chapter 11: Fish and Shellfish Resource (CMACS, 2013)	Post construction beam and otter trawl surveys conducted across the Walney Extension Offshore Windfarm	Data coverage to the southeast of the Offshore Array area and Offshore Electrical Connection Search Area. Direct overlap with the Study Area.
North Hoyle Offshore Windfarm Post construction monitoring beam trawl survey (Cefas, 2005)	Post construction beam trawl surveys conducted across the eastern Irish Sea region, and North Hoyle Offshore Windfarm.	Data coverage to the south of the Offshore Array area and Offshore Electrical Connection Search Area. No direct coverage of the Study Area.
BGS Seabed Sediment datasets (BGS, 2015)	Broadscale marine habitat data presented to provide an indication on the location of suitable habitat and spawning grounds for sandeel and herring.	Coverage of European waters.
Northern Ireland Ground Fish Survey (NIGFS) (ICES, 2005-2018)	Otter trawls conducted across the Irish sea.	Data coverage across the northern Irish Sea region, with partial coverage of the Study Area.
Fisheries Sensitivity Maps in British Waters (Coull et al., 1998)	Fisheries sensitivity maps, showing information on spawning and nursery grounds in British waters.	Broadscale coverage that includes the entire Study Area.

Source	Summary	Coverage of the Study Area
Mapping spawning and nursery grounds of selected fish species in UK waters. Scientific Series Technical Report (Ellis et al., 2012)	Information on fish spawning and nursery grounds in British waters.	Broadscale coverage that includes the entire Study Area.
UK sea fisheries annual statistics report, 2021 (MMO, 2023)	MMO fisheries landings data on commercially important fish species.	Complete coverage of British waters and the Study Area.
International herring larvae survey (IHLS)	Time-series trawl data on herring distribution used to characterise the herring populations throughout the North Sea and English Channel.	Broadscale coverage that includes the entire Study Area.

12.4.3 Summary of key receptors

12.4.3.4 The key fish and shellfish ecology receptors within the Study Area are identified as follows:

- Herring;
- Cod;
- Sandeel;
- Queen scallop;
- King scallop (*Pecten maximus*);
- Atlantic salmon;
- Freshwater pearl mussel;
- Sea lamprey;
- River lamprey;
- Brook lamprey; and
- Nephrops;

12.4.4 Further data collection to be undertaken

12.4.4.4 In order to supplement existing information and assist with the characterisation of the Study Area, further surveys will be undertaken within the Offshore Array area and Offshore Electrical Connection Study Area, which will provide site specific data describing the benthic habitats, which can be used to further evidence benthic suitability for particular behaviours in fish and shellfish, such as spawning. Further information on these surveys can be read within Chapter 10, Benthic Subtidal & Intertidal Ecology. The surveys will include:

- Subtidal benthic sampling (including grab sampling and DDV surveys) and habitat mapping which will be used to characterise the subtidal benthic environment and ground truth the interpretation of geophysical survey data; and

- Subtidal and intertidal sediment sampling for physicochemical analysis which will inform the characterisation of sediment types and provide sediment contaminant data.

12.4.5 Future baseline

12.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

12.5 Identification of impacts and effects

12.5.1 Key parameters for assessment

12.5.1.4 The fish and shellfish ecology scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- The construction of up to 100 wind turbine generators (WTGs) with one of various fixed foundation options with associated seabed preparation and scour protection and preparation;
- The construction of up to five Offshore Substations (OSSs) with piled jacket foundations or monopile foundations with associated seabed preparation and scour protection;
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection;
- Regular operation and maintenance activities throughout the operational life of the Proposed Development; and
- Decommissioning of all project infrastructure at the end of its operational life.

12.5.2 Commitments

12.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to fish and shellfish ecology are described in Table 12.2 below.

Table 12.2: Relevant commitments to Fish and Shellfish Ecology.

ID	Measure proposed	How this measure will be secured	Rationale
Co2	Development of, and adherence to, an Asset Installation & Protection Plan (AIPP) detailing the quantities and installation methods for subsea	MIC condition.	To inform judgements on required cable burial depth, ensuring cable burial where possible while limiting the potential for cable exposure and minimising the

ID	Measure proposed	How this measure will be secured	Rationale
	infrastructure, informed by the Cable Burial Risk Assessment (CBRA).		amount of seabed disturbance required.
Co3	Cable burial will be the preferred method of cable protection, however where burial is not possible, requirements for additional cable protection will be determined through consultation with the relevant stakeholder.	MIC condition.	To ensure project infrastructure is sufficiently protected from exposure, and to limit the effects of Electro-Magnetic Fields (EMF) on sensitive ecological receptors.
Co4	Development of, and adherence to, a MPCP addressing the risks, methods and procedures for dealing with any offshore spills and/or pollution events.	MIC condition.	To minimise the potential for anthropogenic pollution inputs into the marine environment.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project in order to minimise benthic habitat loss/ disturbance/ modification and potential release of contaminants
Co7	Development and implementation of a Project Impact Monitoring & Mitigation Programme (PIMMP).	MIC condition.	To set out environmental monitoring during the pre-construction, construction, post-construction and O&M phases and to minimise temporary habitat loss, permanent habitat loss, increase in SSC and mortality, injury or behavioural disturbance from underwater noise
Co34	The use of 'low order' techniques (such as deflagration) where practicable for the clearance of UXO, should UXO be encountered.	MIC condition.	To minimise effects associated with clearance of UXO.

12.5.3 Approach to assessment of likely significant effects

12.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on fish and shellfish ecology at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

12.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.

12.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 12.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on fish and shellfish ecology based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified fish and shellfish ecology lead.

12.6 Proposed approach to the EIA

12.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on fish and shellfish ecology associated with the Proposed Development that have (or do not have) the potential to result in LSE.

12.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 12.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 12.7.3.

12.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

12.6.1.7 For fish and shellfish ecology, the assessment of impacts will also follow specific guidance. This is further detailed within section 12.7.3 below.

12.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

12.7 Post-scoping

12.7.1 Overview

12.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For fish and shellfish ecology, the scoping study has identified:

- Two impacts which have the potential to result in No LSE; and
- Nine impacts which have the potential to result in LSE.

12.7.2 No LSE and next steps

12.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process in the form of a note detailing the literature and evidence to date on the potential for effects of EMF and operational noise levels from turbines on fish and shellfish ecology receptors, alongside examples from other projects. It is anticipated that this note will be provided to the Biological Subgroup and Fisheries Subgroup of the Offshore Environment Technical Advisory Group (TAG) during Q4 2023.

12.7.3 LSE and next steps

Supporting studies

12.7.3.4 The assessment for fish and shellfish ecology will draw upon the sediment plume modelling work that will be undertaken within the physical processes assessment (see Chapter 7, Marine Geology, Oceanography & Coastal Processes). Underwater noise modelling of the worst-case piling scenario, which will be based on WTC foundation type and size, and water depths in which they will be deployed, will be undertaken to assess the effects on sensitive fish and shellfish receptors.

Assessment Methodology

- 12.7.3.5 The EIA will assess the potential impacts on fish and shellfish ecology identified in the Impacts Register (Annex 5.B).
- 12.7.3.6 The assessment of impacts on fish and shellfish ecology will also follow the following guidance documents listed in section 12.2.4.
- 12.7.3.7 The EIA will consider the potential impacts of the construction, operation and maintenance and decommissioning phases of the Proposed Development within the fish and shellfish ecology Study Area. The EIA will consider the most recent CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (2018) and EPA (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- 12.7.3.8 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 12.7.3.9 For fish and shellfish ecology, the magnitude of an impact is defined by the extent, duration, frequency, probability, reversibility and consequences of the impact.
- 12.7.3.10 Species sensitivities will be derived based on the importance of the Study Area to specific periods of vulnerability within a species life history taking into account the following;
- Spawning grounds;
 - Nursery grounds;
 - Feeding grounds; and
 - Migration routes
- 12.7.3.11 Assessment of the sensitivity of each species will also consider the hearing sensitivity of each species as reported by Popper *et al.* (2014). Fish will be assigned one to four categories depending on the species based on hearing ability. An assessment will

then be made taking into consideration potential injury and disturbance of each species and based on the outputs of the detailed noise modelling.

12.7.3.12 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on fish and shellfish ecology receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

12.7.3.13 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on fish and shellfish ecology receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

12.8 Questions to Consultees

- Question 12.1: Do you agree with the Study Area that has been identified for fish and shellfish ecology?;
- Question 12.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 12.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 12.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to fish and shellfish ecology?; and
- Question 12.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

13 Commercial Fisheries

13.1 Introduction

- 13.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to commercial fisheries from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on commercial fisheries receptors.
- 13.1.1.2 'Commercial fishing' is defined as any form of fishing activity legally undertaken where the catch is sold for taxable profit. Within Isle of Man Territorial Seas, out to 12 nautical miles (nm), commercial fishing vessels registered in the Isle of Man, the UK and EU countries operate to target a range of fisheries, most notably shellfish species including king scallop, queen scallop, lobster, brown crab and whelk.
- 13.1.1.3 This Chapter has links to, and should therefore be read in conjunction with, the following Chapters:
- Chapter 12, Fish & Shellfish Ecology, which includes consideration of potential impacts on species and stocks of commercial importance; and
 - Chapter 14, Shipping & Navigation, which includes consideration of potential impacts on fishing vessel routing and fishing vessel safety.

13.2 Legislation, policy and guidance

- 13.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- 13.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 13.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to commercial fisheries. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 13.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the DoI will address

applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

13.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

13.2.2 Legislation

National legislation

- The Fisheries Act 2012 (Isle of Man Government, 2012). The Fisheries Division of the Environment Directorate within the Department of Environment, Food & Agriculture (DEFA) has legislative responsibility for the management of sea fisheries under the Fisheries Act 2012. This Act provides regulation of sea fishing including licensing of fishing vessels, requirement for registration of buyers of sea-fish and details of prohibitions, seasonal closures and other restrictions applicable to fishing vessels.

13.2.3 Policy

National policy

- The Isle of Man Fisheries Statement (DEFA, 2023) provides a strategic framework for the sustainable management of sea fisheries in the Isle of Man territorial sea.
- A long-term management plan (LTMP) for the Isle of Man king scallop fishery was published in 2022 by DEFA in collaboration with the Isle of Man Scallop Management Board and Bangor University School of Ocean Sciences (DEFA, 2022a). The LTMP covers the period 2022 – 2027, including a harvest control strategy and harvest control rules for the fishery, as well as management strategies for protected species, habitats and ecosystem interactions.
- As part of the Isle of Man king scallop LTMP a Capacity Reduction Programme (Policy) was implemented in 2022 which applies a minimum track-record requirement for future eligibility in the fishery (DEFA, 2022b).
- As part of the Isle of Man king scallop LTMP a Termination of Grandfather Rights (Policy) was implemented in 2022 (DEFA, 2022c). This policy requires that all vessels fishing for king scallops using dredges in the Isle of Man territorial sea must have an engine that is 221 kW or less, effective from 30 October 2024 (i.e., the grandfather rights that allowed certain vessels to have a higher engine power will be terminated).
- The Isle of Man Research Contribution (Pilot) Scheme (RCS) (DEFA, 2021a) facilitates the funding of industry-prioritised research and surveys by permitting the landing of excess scallops (i.e. scallops over the Daily Catch Limit) subject to the conditions of the scheme.
- DEFA Policy on the management of the crab and lobster fisheries within the Isle of Man territorial sea was published in 2021, with a focus on removing latent capacity from the fishery (DEFA, 2021).
- DEFA Policy on the management of the whelk fishery within the Isle of Man territorial sea was published in 2017, which introduced a pot limit for potting vessels targeting whelk, as well as other measures to manage the whelk fishery (DEFA, 2017).

- The Island Development Plan – The Isle of Man Strategic Plan 2016 – Section 11 Transport, Infrastructure and Utilities. (The Cabinet Office, 2016). Including the objective to safeguard the existing and future efficient operation of the Island's ports for fishing, commercial and leisure use without compromising environmental objectives.

13.2.4 Guidance

National guidance

- Manx Marine Environmental Assessment Chapter 4.1: Commercial Fisheries and Sea Angling (Duncan & Emmerson, 2018) provides guidance on considerations for future marine developments, including potential effects on reduced productivity and temporary and permanent displacement.
- A guide to developers for proposed works in the Isle of Man Territorial Seas (Isle of Man Government, 2014), which includes the consideration by the Territorial Seas Committee on whether a scientific stock assessment of relevant commercial species should be included within the EIA.

International guidance

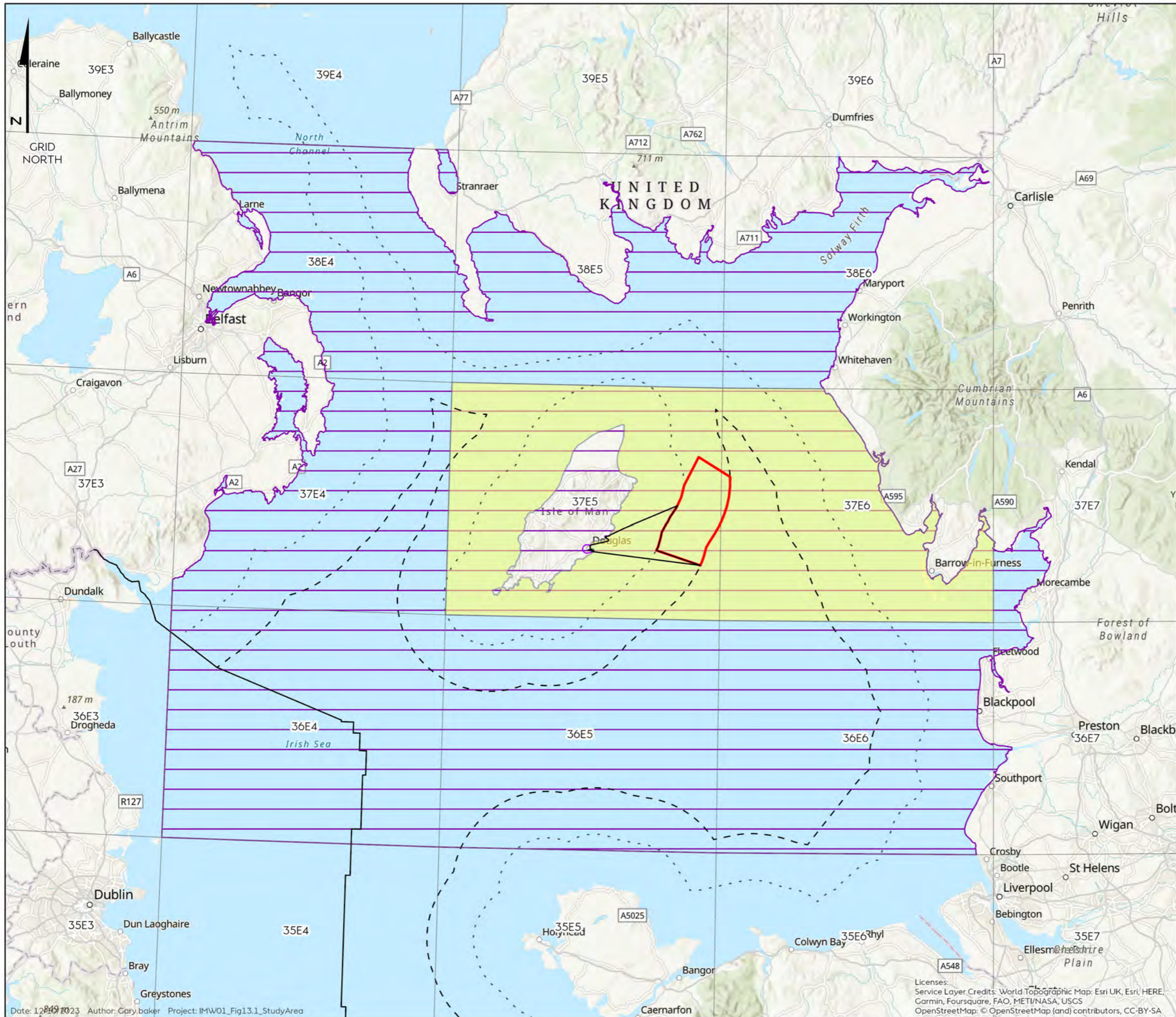
- Good Practice Guidance for assessing fisheries displacement by other licensed marine activities, relevant to Scotland (Xodus, 2022);
- Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments, relevant to UK (United Kingdom Fisheries Economic Network [UKFEN] and Seafish, 2012);
- Fisheries Liaison with Offshore Wind and Wet Renewables group (FLOWW) Recommendations for Fisheries Liaison: Best Practice guidance for offshore renewable developers, relevant to UK (FLOWW, 2014 and BERR, 2008);
- FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Disruption Settlements and Community Funds, relevant to UK (FLOWW, 2015);
- Options and opportunities for marine fisheries mitigation associated with wind farms (Blyth-Skyrme, 2010a);
- Developing guidance on fisheries Cumulative Impact Assessment for wind farm developers (Blyth-Skyrme, 2010b);
- Cumulative impact assessment guidelines, guiding principles for cumulative impacts assessments in offshore wind farms (RenewableUK, 2013);
- Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects. Contract report: ME5403 (Cefas, 2012);
- Fisheries Liaison Guidelines – Issue 6 (UK Oil and Gas, 2015);
- Fishing and Submarine Cables – Working Together (International Cable Protection Committee, 2009); and
- Offshore Wind Farms – Guidance note for Environmental Impact Assessment in respect of Food and Environment Protection Act (FEPA) and Coast Protection Act (CPA) requirements, which are UK legislative acts (that do not encompass the Isle

of Man) (CEFAS, Marine Consents and Environment Unit [MCEU], Department for Environment, Food and Rural Affairs [DEFRA] and DTI, 2004).

13.3 Study Area

13.3.1.4 The Proposed Development is located within the central portion of the International Council for the Exploration of the Sea (ICES) Division 7a (Irish Sea) statistical area; within Isle of Man's Exclusive Economic Zone (EEZ). For the purpose of recording commercial fisheries landings, ICES Divisions 7a is divided into statistical rectangles, of which the Proposed Development overlaps with 37E5 and 37E6. For the purposes of this Scoping Report, the local commercial fisheries Local Study Area comprises these two ICES rectangles.

13.3.1.5 In addition, a wider Regional Study Area is considered for potential fisheries displacement impacts within this Scoping Report. It is proposed that the Regional Study Area will encompass the ICES rectangles that are immediately adjacent to the local Study Area, totalling 11 ICES rectangles including the Local Study Area. The Local and Regional Study Areas are presented in Figure 13.1.



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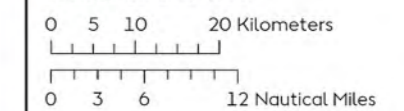
Figure 13.1
Commercial Fisheries Study Area Based on Overlap with ICES Rectangles

Scoping Boundary

- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Commercial Fisheries Local Study Area
- Commercial Fisheries Regional Study Area
- ICES Statistical Rectangles
- EEZ boundary
- 6 NM Limit
- 12 NM Limit



Coordinate System: ETRS 1989 UTM Zone 30N
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13.4 Baseline

13.4.1 Overview of baseline

- 13.4.1.4 This section provides a high-level overview of the commercial fisheries baseline environment based on a review of the data sources provided within Table 13.1.
- 13.4.1.5 Landings by UK and Isle of Man registered vessels from the commercial fisheries Local Study Area had an annual average landings value of approximately £11.4 million across the years 2016 to 2021 (Marine Management Organisation (MMO), 2023a), with landings values peaking in 2015 at £15.4 million and being at their lowest in 2020 at £7.2 million (due to a combination of COVID-19 restrictions and the UK EU-exit). Over the same time period, the annual average weight of landings from the Local Study Area was just under 6,750 tonnes. Data for Irish registered vessels will be analysed within the EIA, but is not yet available to inform this Scoping Report.
- 13.4.1.6 Landings of shellfish dominated, accounting for 91% of the total landings value from the Local Study Area (based on data from MMO, 2023a). Landings of pelagic fish species accounted for 6% of the total landings value, and demersal fish species for 3%.
- 13.4.1.7 The landings profile varies across the two ICES rectangles that make up the Local Study Area. The majority of the Offshore Array area and the entirety of the Offshore Electrical Connection Search Area are located within ICES rectangle 37E5; a small portion of the eastern section of the Offshore Array is located within 37E6. In 2021, landings from 37E5 were dominated by vessels registered in the Isle of Man (52% by value), followed by Northern Irish registered vessels (40%). As indicated in Figure 13.2, the key species targeted by Manx vessels fishing in 37E5 are king scallop, brown crab, whelk, lobster and queen scallop. Landings by Manx vessels are predominately into three ports: Peel, Douglas and Port St. Mary.
- 13.4.1.8 King scallop is recognised as the most important fishery species targeted within the Isle of Man Territorial Seas (Duncan and Emmerson, 2018). The king scallop season commences annually on 1 November and runs until 31 May. The king scallop fishery is managed by a total allowable catch (TAC) and a daily catch limit (DCL). There is also a curfew, with fishing for king scallops prohibited between 6pm and 6am.
- 13.4.1.9 The queen scallop fishery has declined since 2014 and is currently managed via a TAC and quota regime to encourage stock-rebuilding. Queen scallops are principally targeted by demersal otter trawl using tickler chains that encourage the queen scallops out of the sediment. In 2021, approximately £500,000 (first sales value) of queen scallops were landed by vessels registered to the Isle of Man and Scotland from ICES rectangle 37E5 (Figure 13.2). Queen scallops, known as 'queenies', carry significant cultural importance to the Isle of Man. Queenies are a Manx national dish, and celebrated at an annual Isle of Man Queenie Festival. Furthermore, "Isle of Man Queenies" are recognised as a protected food name under the protected geographical indications and protected designations of origin regulation. Landings of queen scallops have a cyclical nature, with highs and lows every 7-10 years. The EIA will therefore analyse a long-term data series for queen scallops landings data from 2011 to 2021 (and 2022 when this data becomes available).
- 13.4.1.10 Northern Irish vessels target pelagic species, namely herring landed into Belfast, as well as nephrops landed into Portavogie, Kilkeel and Ardglass. Nephrops targeted by Northern Irish vessels make up the highest value fishery within ICES rectangle 37E6. English vessels make up the remainder of the landings, across a range of species including nephrops, lobster, brown crab and sole (*Solea solea*).



Figure 13.2: Landed value by species and port of landing in 2021 from ICES rectangles 37E5 and 37E6 indicating vessel nationality (MMO, 2023a).

13.4.1.11 Spatial activity mapping is available for the fisheries in the region and will be analysed as part of the commercial fisheries evidence base. Of particular note is the nationally important scallop dredge fishery targeting queen and king scallop, as shown in Figure 13.3 and Figure 13.4. The scallop dredge fishery is targeted throughout the Proposed Development, including both the Offshore Array area and Offshore Electrical Connection Search Area.

13.4.1.12 Variations and trends in commercial fisheries activity are an important aspect of the baseline assessment and are the principal reason for considering up to five years of key baseline data. Given the time periods considered in this scoping exercise (i.e., 2017 to 2021), some of the existing baseline data captures changes in commercial fisheries activity resulting from the COVID-19 pandemic, which affected market demand and supply chains for certain species.

13.4.1.13 However, changes in fishing patterns resulting from the withdrawal of the UK from the EU would be expected in future data sets, which include data for 2021 onwards. Data for the annual period of 2021 is included within this Scoping Chapter for UK and Isle of Man commercial fisheries landings. Data for 2022 is expected to become available in October 2023 and will be analysed within the EIA. Long term environmental and climatic changes may be expected to be detectable within the five-year time series but may benefit from longer-term analysis dependent on the target species (for example, where king scallop are a relevant target species, analysis of landings across a seven to ten-year period is proposed to capture the cyclical nature of their productivity and associated fishery). The inclusion of such a longer-term analysis will be informed by stakeholder consultation.

13.4.2 Data sources

13.4.2.4 This Scoping Chapter has been informed by various data sources as listed in Table 13.1; these data sources will be further analysed as the EIA develops, alongside additional site-specific data that will be collected for the Proposed Development.

13.4.2.5 In addition to these data sources, vessel traffic data will also be collated through 12 months of Automatic Information System (AIS) surveys, as well as site specific surveys to cover vessels not carrying AIS. These surveys will include fishing vessels, with further details provided in Chapter 14, Shipping & Navigation.

Table 13.1: Baseline data sources.

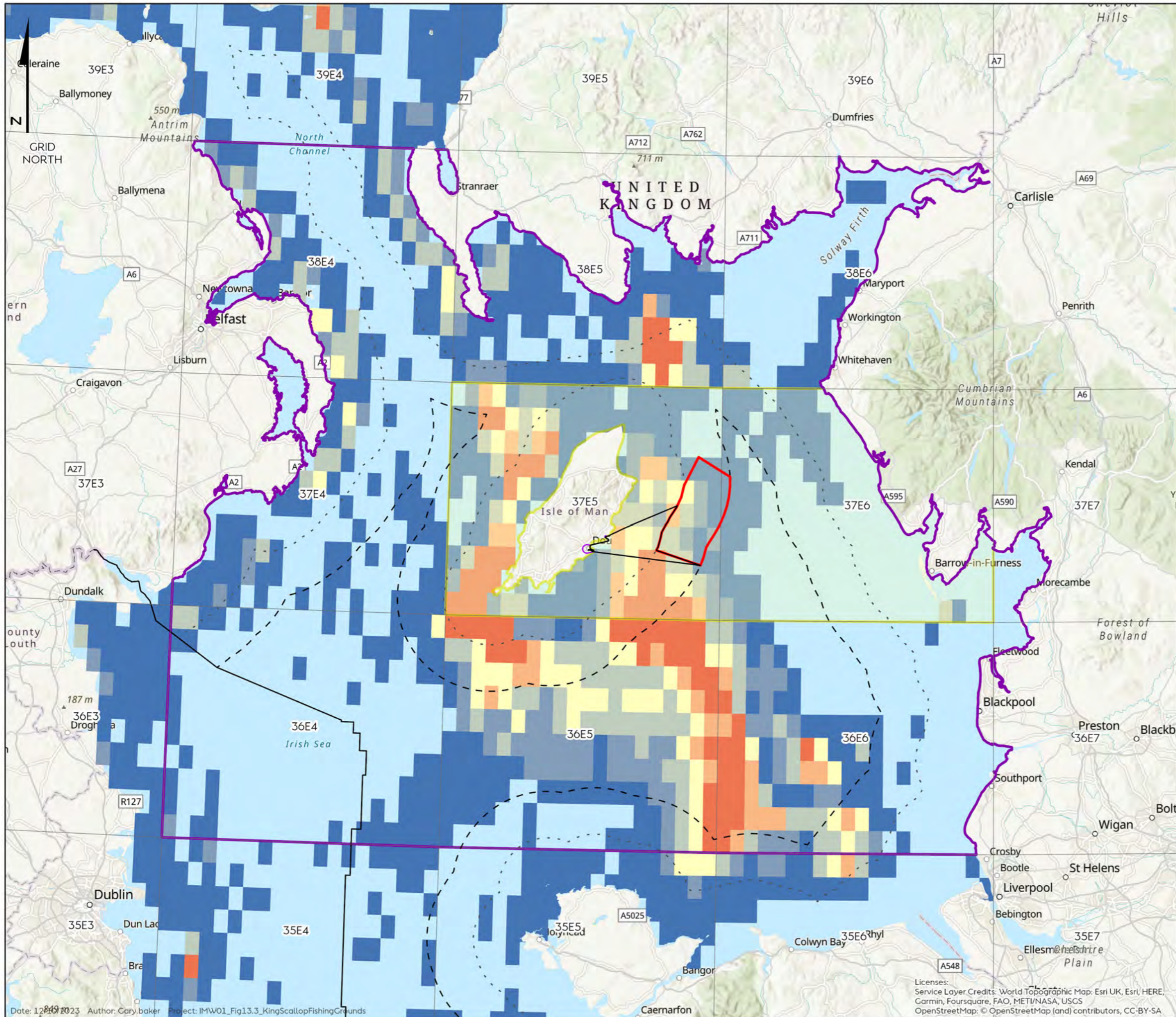
Source	Summary	Coverage of the Study Area
Manx Marine Environmental Assessment (Isle of Man Government, 2018)	A summary of Manx fisheries including target fisheries, areas fished and seasonality, as well as fleet details.	Isle of Man Territorial Seas.
A guide to developers for proposed works in the Isle of Man Territorial Seas (Isle of Man Government, 2014)	Coordinates of whelk fishing grounds within Isle of Man Territorial Seas.	Isle of Man Territorial Seas.
Isle of Man fishing activity mapping	Data to be sourced from Isle of Man Government.	Isle of Man Territorial Seas.
UK annual fisheries landings statistics Marine Management Organisation (MMO), 2017 to 2021 (MMO, 2023a)	Fisheries landings data for registered fishing vessels landing to their home nation ports, including vessels registered in Isle of Man, Scotland, England, Northern Ireland and Wales.	UK and Isle of Man national dataset providing full coverage of the commercial fisheries Local and Regional Study Areas.
UK Vessel Monitoring System (VMS) data MMO, 2020 (MMO, 2023b)	VMS data for UK fishing vessels greater than 15 m in length, including vessels registered in Isle of Man, Scotland, England, Northern Ireland and Wales. Note that UK vessels ≥ 12 m in length have VMS on board, however, to date, the MMO provide amalgamated VMS datasets for ≥ 15 m vessels only. VMS data sourced from MMO displays the first sales value (£) of catches.	UK and Isle of Man national dataset providing full coverage of the commercial fisheries Local and Regional Study Areas.
EU annual fisheries landings statistics. Scientific, Technical and Economic Committee for Fisheries (STECF), 2004 to 2016 (EU Data Collection Framework (DCF), 2020)	Fisheries landings data for registered fishing vessels landing to their home nation ports. Including EU, UK and Isle of Man.	European-wide dataset providing full coverage of the commercial fisheries Local and Regional Study Areas.
EU VMS data ICES, 2016 to 2020 (ICES, 2022)	VMS data for fishing vessels greater than 12 m in length. VMS data sourced from ICES displays the surface Swept Area Ratio (SAR) of catches by different gear types and covers EU (including UK and Isle of Man) registered vessels 12 m and over in length. Surface SAR indicates the number of times in an annual period that a demersal fishing gear	European-wide dataset providing full coverage of the commercial fisheries Local and Regional Study Areas.

Source	Summary	Coverage of the Study Area
	makes contact with (or sweeps) the seabed surface. Surface SAR provides a proxy for fishing intensity.	
Fishing vessel route density data European Maritime Safety Agency (EMSA, 2023)	Fishing vessel route density, based on vessel Automatic Information System (AIS) positional data. AIS is required to be fitted on fishing vessels ≥ 15 m length.	European-wide dataset providing full coverage of the commercial fisheries Local and Regional Study Areas.
Key species stock assessments ICES and Bangor University, various publication dates	Assessments of the status of commercially targeted fish and shellfish stocks.	Varying spatial coverage, in most cases providing full coverage of the commercial fisheries Local and Regional Study Areas.

13.4.3 Summary of key receptors

13.4.3.4 Each identified fishing fleet that is active across the Local and/ or Regional Study Areas is defined as a separate receptor for the purpose of assessing potential impacts. Based on the data analysed to date, the following commercial fisheries receptors have been identified:

- Isle of Man scallop dredgers targeting king scallop and queen scallop;
- Isle of Man demersal otter trawlers targeting queen scallop;
- UK scallop dredgers targeting king scallop and queen scallop;
- Irish scallop dredgers targeting king scallop and queen scallop;
- Isle of Man potting vessels targeting lobster, brown crab and whelk;
- UK potting vessels targeting lobster, brown crab and whelk;
- UK demersal otter trawlers targeting nephrops and mixed demersal finfish;
- UK beam trawlers targeting sole, plaice, thornback ray and other flatfish and ray species;
- Belgian beam trawlers targeting sole, plaice, thornback ray and other flatfish and ray species;
- UK pelagic trawlers targeting herring; and
- UK vessels using handline to target bass.



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Figure 13.3
Location of the King Scallop Fishing Grounds Targeted in the Irish Sea - Information Collated by the ICES Scallop Working group (ICES, 2022)

- ICES Statistical Rectangles
- Commercial Fisheries Local Study Area
- Commercial Fisheries Regional Study Area
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Dredge SAR Mean**
- 0.00 - 0.10
- 0.11 - 0.20
- 0.21 - 0.40
- 0.41 - 0.60
- 0.61 - 0.80
- 0.81 - 2.00
- 2.01 - 3.77
- EEZ boundary
- 6 NM Limit
- 12 NM limit



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:900,000

0 5 10 20 Kilometers

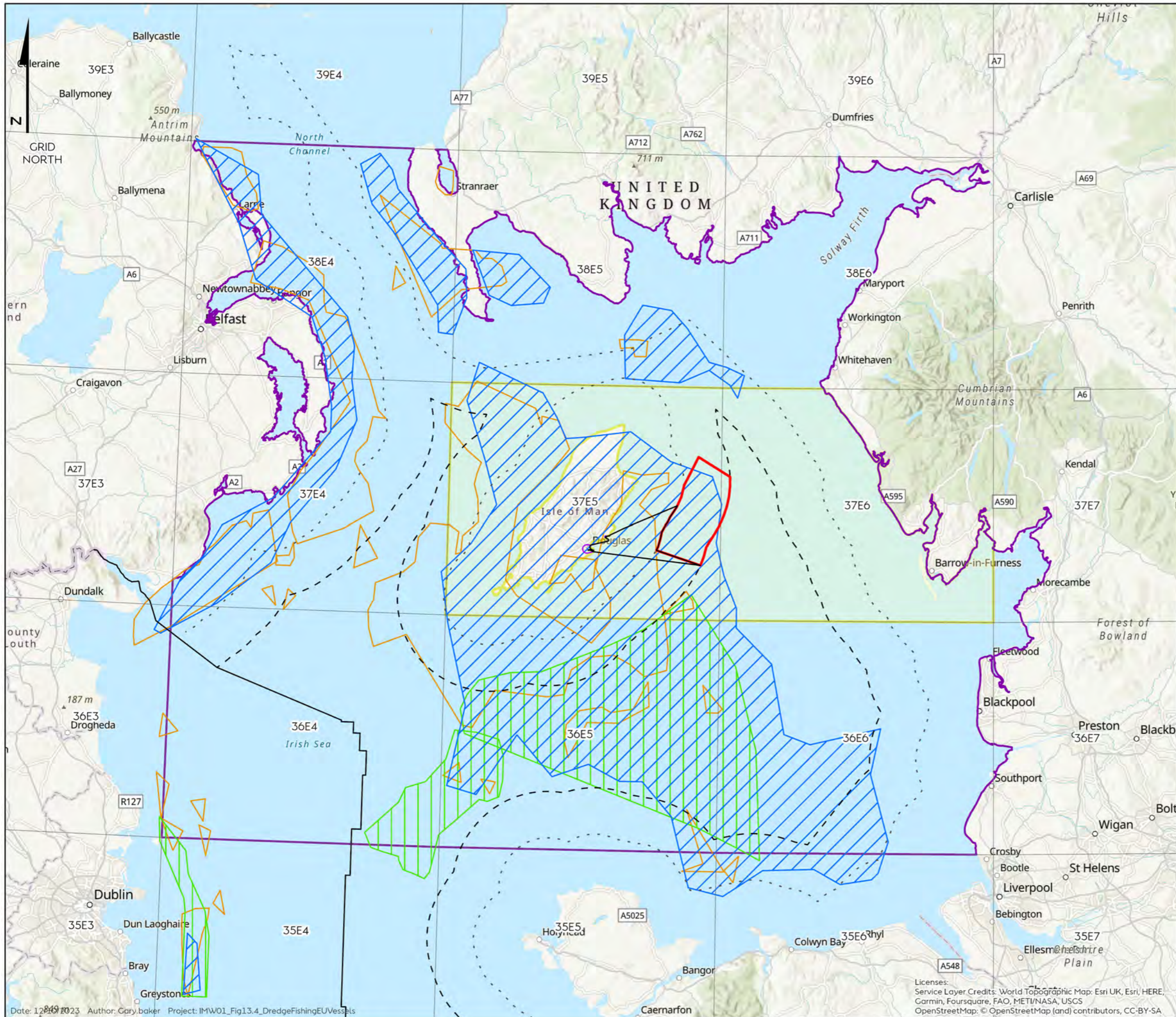
0 2.75 5.5 11 Nautical Miles

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Figure 13.4
Vessel Monitoring System Data Indicating Ave Annual Surface Swept Area Ratio for Dredge Fishing (EU vessels - UK and Isle of Man) 2016-2020 (ICES, 2022)

- ICES Statistical Rectangles
- Commercial Fisheries Local Study Area
- Commercial Fisheries Regional Study Area
- Scoping Boundary**
 - Offshore Electrical Connection Search Area
 - Terrestrial Electrical Connection Search Area
 - Offshore Array
- King Scallop Fishing Grounds**
 - Isle of Man and UK Vessels
 - Irish Vessels
 - Northern Irish Vessels
 - EEZ boundary
 - 6 NM Limit
 - 12 NM limit



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:900,000

0 5 10 20 Kilometers

0 2.75 5.5 11 Nautical Miles

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13.4.4 Further data collection to be undertaken

13.4.4.4 The data sources identified in Table 13.1 will be analysed and interrogated to develop a detailed baseline characterization which will characterise the fisheries that are active across the Local and Regional Study Areas across a long-time period (i.e., five to ten years). Further data will be requested from the Isle of Man Government including inshore vessel monitoring system data, landings data and surveillance data. This analysis will form an extended characterization of commercial fisheries, presented as an evidence base in a Technical Report which will be provided to stakeholders via the Evidence Plan Process, as well as forming an Annex to the ES which will accompany the MIC application.

13.4.4.5 Consultation and engagement with the commercial fishing industry will be undertaken in order to ground-truth available baseline data and gain further understanding of commercial fisheries activity by smaller vessels across the inshore portion of the Local and Regional Study Areas. Consultation will be undertaken with a number of relevant stakeholders, including the following:

- Manx Fish Producers Organisation;
- Fisheries Division of DEFA, Isle of Man Government;
- National Federation of Fishermen's Organisations;
- Welsh Fishermen's Association;
- Scottish Fishermen's Federation;
- Scottish White Fish Producers Association;
- Northern Ireland Fish Producers' Organisation and Anglo-North Irish Fish Producers Organisation; and
- Individual fishermen as identified by the Applicant's Fisheries Liaison Officer (FLO)/ other means.

13.4.4.6 Analysis of data and the results of consultation will provide an extended baseline characterisation of the Local and Regional Study Areas, which will underpin and inform the impact assessment.

13.4.5 Future baseline

13.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

13.5 Identification of impacts and effects

13.5.1 Key parameters for assessment

13.5.1.4 The commercial fisheries scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- The Offshore Array of 253 km² located approximately 11 km from Maughold Head at its closest point to shore, in water depths of 10 to 37 m below LAT;
- Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options;

- Up to five Offshore Substations within the Offshore Array area on one of various fixed foundation options with associated seabed preparation and scour protection;
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection;
- The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; and
- Decommissioning of the site to remove all offshore infrastructure above the seabed.

13.5.1.5 The MDS for commercial fisheries relates to the maximum number of WTGs and OSS which are located within the entirety of the Offshore Array area.

13.5.2 Commitments

13.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to commercial fisheries are described in Table 13.2 below.

Table 13.2: Relevant commitments to commercial fisheries.

ID	Measure proposed	How this measure will be secured	Rationale
Co4	Development of, and adherence to, a MPCP addressing the risks, methods and procedures for dealing with any offshore spills and/or pollution events.	MIC condition.	To minimise the potential for anthropogenic pollution inputs into the marine environment.
Co5	Preparation and implementation of an Operation and Maintenance (O&M) Plan including a schedule of O&M activities.	Consent condition(s).	To set out and plan for scheduled maintenance activities during the operational life of the Proposed Development.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co8	Promulgation of information to sea users via Notices to Mariners (NtMs) to DoI.	MIC condition.	To ensure mariners are afforded sufficient advanced notice of offshore works.
Co9	Establishment of offshore construction safety zones of up to 500 m around infrastructure during construction and major maintenance in the O&M phase.	MIC condition.	Minimises the risk of fishing gear interaction with Proposed Development infrastructure.

ID	Measure proposed	How this measure will be secured	Rationale
Co29	Development of, and adherence to, a Fisheries Co-existence and Liaison Plan (FCLP).	MIC condition.	Details the strategy for fisheries consultation and mitigation throughout the construction phase and operational life of the Proposed Development. The FCLP procedures will adhere to the most recently available best practice industry guidelines.
Co30	Appointment of a FLO.	MIC condition.	To maintain active and continued consultation with the fishing industry.
Co31	Implementation of 50 m advisory safety zones around operational offshore surface infrastructure.	MIC condition.	Minimises the risk of fishing gear interaction with Proposed Development infrastructure.
Co32	Use of guard vessels and advisory safe passing distances for vessels where necessary.	MIC condition.	Minimises the risk of surface vessel interaction with project infrastructure and Maximises awareness of temporary hazards.
Co33	Development of, and adherence to, an Aids to Navigation (AtoN) Plan (ANP).	MIC condition.	To confirm compliance with legal requirements with regard to lighting and marking of structures for shipping, navigation and aviation purposes.
Co42	Undertake marine co-ordination and communication with relevant stakeholders	MIC condition.	To manage and communicate project vessel movements as to maximise awareness of the infrastructure allowing planning of fishing activities.
Co43	Marking and lighting of the site, including a buoyed construction area, in agreement with Northern Lighthouse Board (NLB).	MIC condition.	Maximises awareness of infrastructure in both day and night conditions including in restricted visibility.

13.5.3 Approach to assessment of likely significant effects

13.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on commercial fisheries at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

13.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result

of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

13.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 13.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on commercial fisheries based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified commercial fisheries lead.

13.6 Proposed approach to the EIA

13.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on commercial fisheries associated with the Proposed Development that have (or do not have) the potential to result in LSE.

13.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 13.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 13.7.3.

13.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

13.6.1.7 For commercial fisheries, the assessment of impacts will also follow specific guidance. This is further detailed within section 13.7.3 below.

13.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data are collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

13.7 Post-scoping

13.7.1 Overview

13.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For commercial fisheries, the scoping study has identified:

- Six impacts which have the potential to result in LSE.

13.7.2 No LSE and next steps

13.7.2.4 No impacts for commercial fisheries have been identified as having potential for no LSE at this stage. All impacts identified for commercial fisheries in the Impacts Register (Annex 5.B) will therefore be carried forward for assessment in the EIA.

13.7.3 LSE and next steps

Supporting studies

13.7.3.4 A range of studies are being undertaken across the Proposed Development which will inform commercial fisheries assessment, including:

- Marine traffic survey (AIS and radar); and
- Information and data held by the Applicant's FLO (CFLO).

13.7.3.5 Of paramount importance to the commercial fisheries assessment is the findings of the fish and shellfish ecology assessment (scoping information for which is provided in Chapter 12, Fish & Shellfish Ecology), which will identify and assess the impacts on the fish and shellfish resource. The fish and shellfish ecology assessment will specifically consider the resulting effects on commercially important species across a range of impacts, including noise, electro-magnetic fields, suspended sediment and habitat loss and creation.

13.7.3.6 The fish and shellfish assessment will consider species at a stock level, while the commercial fisheries assessment considers the geographic scale based on fishing grounds at a more local level. The fish and shellfish ecology and commercial fisheries technical experts will liaise with each other to ensure the potential effects of disruption to commercially exploited fish and shellfish resources are robustly and appropriately assessed.

Assessment Methodology

13.7.3.7 The EIA will assess the potential impacts on commercial fisheries identified in the Impacts Register (Annex 5.B).

13.7.3.8 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

13.7.3.9 For commercial fisheries, impact magnitude will be determined by considering the ability for vessels to carry on fishing activities due to fishing being impeded and/ or loss of biological resource. The magnitude assessment will consider the duration and physical extent of the impact, as well the degree to which a loss of ability to carry on fishing occurs (based on the proportion of effort within and reliance upon the area overlapping the Proposed Development) and/ or the degree to which a loss of availability of fish or shellfish resource occurs.

13.7.3.10 The sensitivity of commercial fisheries receptors will be determined by considering the range and availability of alternative fishing grounds for each fleet assessed, based on operational range and extent of target species distribution. In addition, the sensitivity assessment will consider the level of vulnerability and recoverability relative to each fleet segment.

13.7.3.11 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on commercial fisheries receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

13.7.3.12 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on commercial fisheries receptors, in accordance with the

methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

13.7.3.13 It is recognised that a relatively large number of offshore wind farm sites have been identified in the Irish Sea region, coupled with existing offshore wind farms in the east Irish Sea area that continue to pose ongoing impact to commercial fisheries sectors; notably for the scallop sector.

13.8 Questions to Consultees

- Question 13.1: Do you agree with the Study Areas that has been identified for commercial fisheries?;
- Question 13.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 13.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 13.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to commercial fisheries?;
- Question 13.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?; and
- Question 13.6: Do you agree that all receptors related to commercial fisheries have been identified?

14 Shipping & Navigation

14.1 Introduction

- 14.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to shipping and navigation from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on shipping and navigation receptors. This Chapter also includes the consideration of impacts on Search and Rescue (SAR).
- 14.1.1.2 The output of the scoping process will feed into the Navigational Risk Assessment (NRA) which will be produced in support of the EIA process and application for MIC. Given that there is no specific guidance for projects within Isle of Man Territorial Seas and based on feedback received from the DoI (as part of the 2016 Scoping Opinion) the shipping and navigation assessment will deviate from the standard EIA methodology and follow the guidance provided in Marine Guidance Note (MGN) 654.
- 14.1.1.3 NRA is the primary assessment approach within the shipping and navigation industry. The submission will therefore consist of a full assessment undertaken in line with MGN 654 produced by the Maritime and Coastguard Agency (MCA), which contains the 'Methodology for Assessing Marine Navigational Safety and Emergency Response Risks'. This proposed proportionate approach to the assessment will ensure all legislative requirements are fulfilled by including consideration of both the requirements of MGN 654 in NRA terms, as well as legislative requirements and best practice in EIA terms.
- 14.1.1.4 This Chapter should be read in conjunction with the following linked and supporting offshore chapters:
- Chapter 13, Commercial Fisheries, which considers the impacts associated with active fishing;
 - Chapter 17, Military & Civil Aviation, which considers the impacts associated with aviation navigation; and
 - Chapter 18, Other Marine Users & Activities, which considers the impacts of the activity or access displacement of other marine users receptors.

14.2 Legislation, policy and guidance

- 14.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- 14.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report

is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 14.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to shipping and navigation. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 14.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 14.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.
- 14.2.1.9 The following legislation, policy and guidance is of relevance to the assessment of impacts from the Proposed Development on shipping and navigation.

14.2.2 Legislation

National legislation

- Isle of Man Harbours Act 2010 (Isle of Man Government, 2010).

International legislation and agreements

- Convention on the International Regulations for Preventing Collisions at Sea (COLREGS) as amended (International Maritime Organization (IMO), 1972/77);
- International Convention for the Safety of Life at Sea (SOLAS) as amended (IMO, 1974); and
- United Nations Convention on the Law of the Sea (UNCLOS) (United Nations (UN), 1982).

14.2.3 Policy

National policy

- The Island Development Plan - The Isle of Man Strategic Plan 2016 – Section 11 Transport, Infrastructure and Utilities. (The Cabinet Office, 2016).

14.2.4 Guidance

National guidance

- Isle of Man Government: Manx Marine Environmental Assessment, Infrastructure Shipping and Navigation (Isle of Man Government, 2022).

International guidance

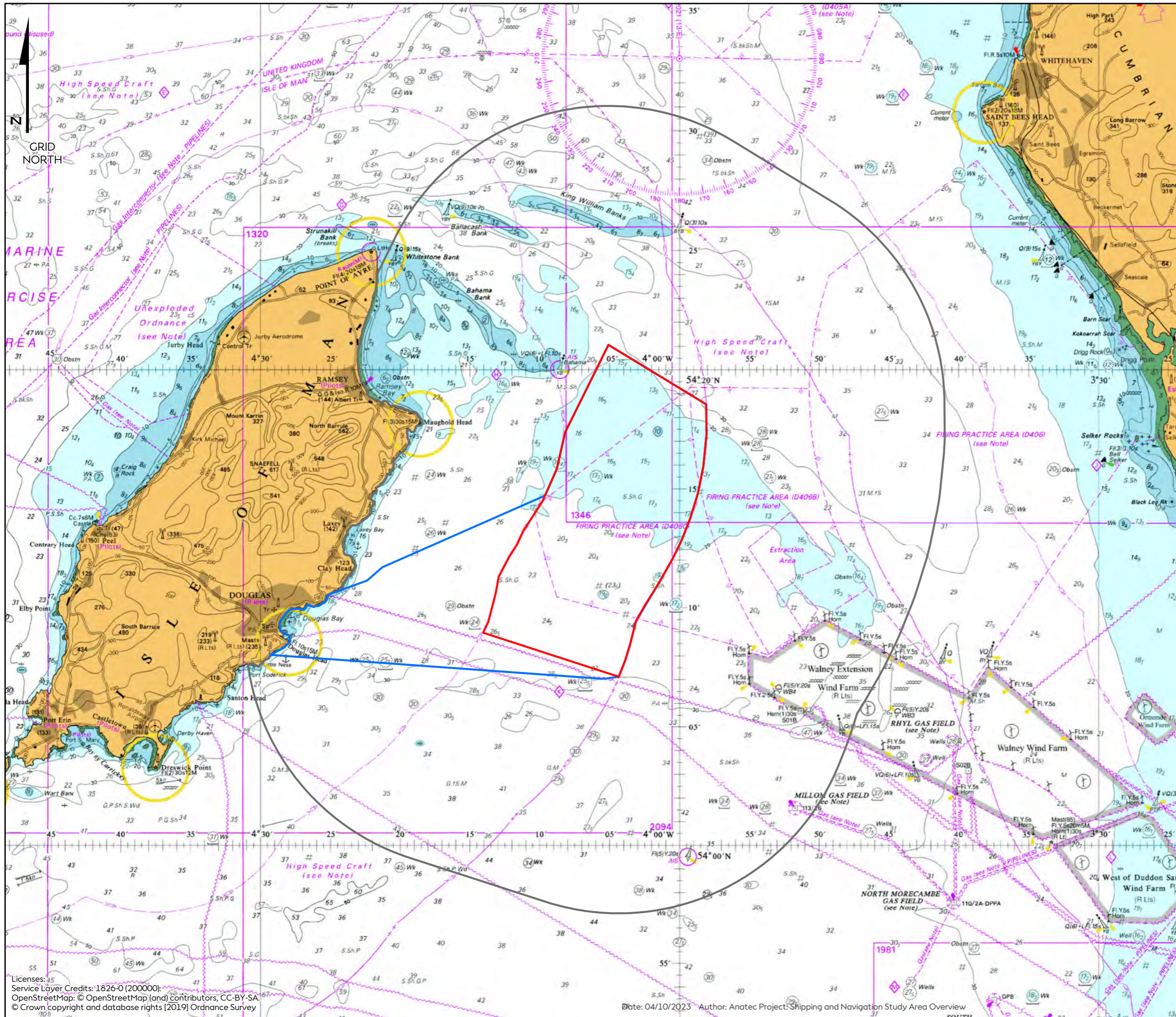
- MGN 654 and its annexes (Merchant and Fishing) Safety of Navigation: Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response (MCA, 2021);
- Revised Guidelines for Formal Safety Assessment (FSA) for Use in the IMO Rule-Making Process (IMO, 2018);

- International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Guideline G1162 Guidance on the Marking of Offshore Man-Made Structures (IALA, 2021 (a)) and IALA Recommendations O-139 on The Marking of Man-Made Offshore Structures (IALA, 2021 (b)); and
- The Royal Yachting Association's (RYA) Position on Offshore Renewable Energy Developments: Paper 1 (of 4) – Wind Energy (RYA, 2019).

14.3 Study Area

14.3.1.4 The shipping and navigation Study Area has been defined as 10 nautical miles (nm) around the Offshore Array which has been cropped to the land to exclude onshore Isle of Man territory as indicated in Figure 14.1. The 10 nm Study Area is standard for shipping and navigation assessments as it is large enough to encompass any vessel routeing which may be impacted, while remaining site specific to the area being studied.

14.3.1.5 As part of the NRA, the Offshore Electrical Connection Search Area will have an approximate 2 nm Study Area, However, given that the Offshore Electrical Connection Search Area will make landfall within either Douglas or Groudle Bay, the Study Area required for this component of the Proposed Development is already fully encompassed within the shipping and navigation Study Area for the Offshore Array. The shipping and navigation Study Area is shown in Figure 14.1.



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Figure 14.1

Shipping and Navigation Study Area

- Offshore Array
- Offshore Electrical Connection Search Area
- Shipping and Navigation Study Area



Coordinate System: WGS 1984 World Mercator
 Scale@A3: 1:500,000

0 5 10 20 Kilometres

0 3 6 12 Nautical Miles

REV	REMARK	DATE
03	Updated Template	04/10/2023

Title: Shipping and Navigation Study Area
 Document no: IMWO1
 Created by: DS
 Checked by: JM
 Approved by: SW

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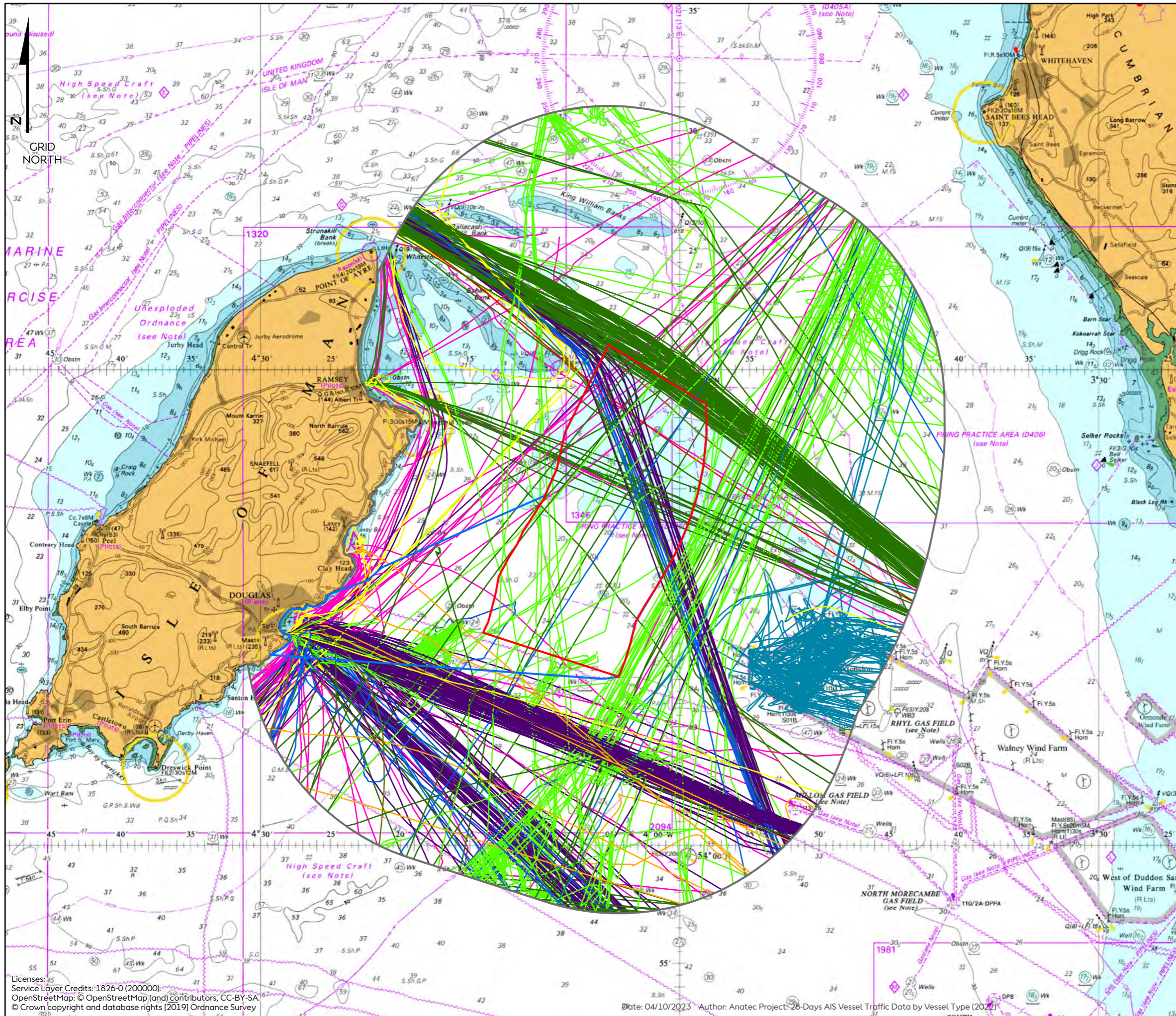
14.4 Baseline

14.4.1 Overview of baseline

Vessel traffic

- 14.4.1.4 An overview of the 28-day Automatic Identification System (AIS) vessel traffic data collected from coastal receivers from 18-31 January 2022 and 18-31 July 2022, colour-coded by vessel type is illustrated in Figure 14.2. This data enables the key users to be identified. In summary, the data showed that during the winter data period, there was an average of between 13 and 14 unique vessels per day recorded within the Study Area. The busiest day for vessel traffic during the winter data period recorded 17 unique vessels while the quietest day recorded nine unique vessels. The most common vessel types recorded were fishing vessels (34%), cargo vessels (28%), and passenger vessels (14%).
- 14.4.1.5 During the summer data period the data showed there was an average of 19 unique vessels per day recorded within the Study Area. The busiest day for vessel traffic during the summer data period recorded 28 unique vessels while the quietest day recorded seven unique vessels. The most common vessel types recorded were recreational vessels (26%), cargo vessels (20%), and fishing vessels (15%). Passenger vessels and wind farm vessels were also commonly recorded during the summer data period (each 14%).
- 14.4.1.6 During both data periods combined, approximately 13% of all vessel tracks intersected the Offshore Array.
- 14.4.1.7 Across each data period, well defined main commercial vessel traffic routes were identified. Routes identified include:
- Roll-on/Roll-Off passenger (RoPax) vessel routeing between Douglas (Isle of Man) – Heysham (UK) to the south of the Offshore Array, operated by Isle of Man Steam Packet Company with up to four transits per day during both data periods.
 - RoPax routeing between Douglas – Liverpool (UK) at the south of the Study Area, operated by Isle of Man Steam Packet Company with up to four transits per day during the summer data period only.
 - RoPax routeing between Birkenhead (UK) – Belfast (UK) north-west south-east through the Offshore Array, operated by Stena Line with one transit per day during both data periods.
 - Roll-On/Roll-Off cargo (RoRo) routeing between Belfast – Heysham through the northern boundary of the Offshore Array, operated by Stena Line with four transits per day during both data periods; and
 - General cargo vessel routeing between Glasson Dock (UK) – Ramsey (Isle of Man) – Belfast through the center of the Offshore Array, operated by WS Mezeron with one transit per day during both data periods.
- 14.4.1.8 The Stena Line routes between Belfast – Heysham and Belfast – Birkenhead have been identified as key risks through a combination of baseline data acquisition and early engagement with shipping and navigation stakeholders. The Applicant is continuing active discussions with stakeholders throughout the pre-application phase, including via the Lifeline Services Technical Advisory Group (TAG) as part of the Evidence Plan Process, in addition to direct stakeholder engagement. Further consultation will develop the Applicant's understanding of the baseline environment and will inform the assessment as well as any requirements for commitments and monitoring deemed necessary.

- 14.4.1.9 Fishing vessels were mainly in transit north-east south-west to the immediate east of the Offshore Array to/ from the Solway Firth, with equal levels recorded during both winter and summer. Small areas of likely active fishing activity were noted south of the Offshore Array and to the northern extent of the Study Area.
- 14.4.1.10 Recreational vessels were recorded primarily during the summer data period mainly on transits to/ from Douglas and around the coastal areas of the Isle of Man. Only one recreational vessel was recorded during the winter data period.
- 14.4.1.11 Based on AIS navigational status programmed on the AIS transmitter, vessel speed, and individual track behaviour, vessels can be identified as being at anchor these will also be considered within the NRA.



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Figure 14.1

Shipping and Navigation Study Area

- Offshore Array
 - Offshore Electrical Connection Search Area
 - Shipping and Navigation Study Area
- Vessel Type
- Fishing
 - Dredger
 - Tug
 - Passenger
 - Cargo
 - Tanker
 - Other
 - Recreational
 - Oil and Gas
 - Wind Farm



Coordinate System: WGS 1984 World Mercator
 Scale@A3: 1:500,000

0 5 10 20 Kilometres

0 3 6 12 Nautical Miles

REV	REMARK	DATE
03	Updated Template	04/10/2023

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Navigational features

- 14.4.1.12 All relevant navigational features to shipping and navigation will be detailed within the NRA. The key navigational features include Douglas Harbour which is the closest commercial port to the Offshore Array at 8.1 nm south-west. This is the main Isle of Man port with facilities for both commercial and private vessels and the only port in the Isle of Man with dedicated RoRo/ RoPax services and passenger handling facilities. Douglas Harbour has pilot facilities with the pilot boarding station approximately 7nm south-west of the Offshore Array within Douglas Bay and within the Offshore Electrical Connection Search Area. Pilotage is not compulsory but available on request. Recommended anchorage is located to the south of the harbour with several recommended locations detailed within the West Coast of England and Wales Pilot NP37 21st Edition (United Kingdom Hydrographic Office (UKHO), 2022), all off Douglas Head. The harbour limits extend approximately 3 nm offshore and are situated between Clay Head and Port Soderick. Two subsea cables also make landfall within Douglas Bay. One of these cables is the interconnector cable between the Isle of Man and England (Bispham, Blackpool) and the other a fibre optic telephone cable between the Isle of Man and Silecroft (Cumbria, UK). Both cables run south of the Offshore Array.
- 14.4.1.13 Ramsey Harbour is also located 8.6 nm north-west and is primarily used for commercial vessels including Lift-On/Lift-Off (LoLo) services and also handles the imports of bulk cement.
- 14.4.1.14 The Walney and Walney Extension Offshore Wind Farms are located approximately 5.0 nm east of the Offshore Array, all phases have been operational since 2017;
- 14.4.1.15 The Bahama south cardinal mark light buoy is located approximately 1.3 nm north-west of the Offshore Array, at the south of the shallow Bahama Bank, and is the closest aid to navigation (AtoN). A wave buoy operated by Orsted has been recently positioned within the Offshore Array and at the time of writing was not present on nautical charts but it is anticipated to be present until August 2024.

14.4.2 Data sources

- 14.4.2.4 The data sources that have been used to inform this Chapter are presented within Table 14.1. These data sources will be taken forward and used to inform the NRA, alongside additional site-specific data that will be collected for the Proposed Development.

Table 14.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
28 days of seasonal AIS data collected from coastal receivers from 18-31 January 2022 and 18-31 July 2022, Anatec.	Provides movements of vessels broadcasting on AIS within the shipping and navigation Study Area. Vessels which are not required to carry AIS mandatorily may be underrepresented. In particular, vessels under 300 gross tonnage (GT), commercial fishing vessels under 15 metres (m) length and recreational vessels are not required to, and so may not broadcast information on AIS, unless doing so voluntarily.	Shipping and navigation Study Area.
Incident data provided by the Isle of Man Ship Registry, Isle of Man Ship Registry 2013-2022	Provides details and locations of incidents reported by the Isle of Man Ship Registry over a 10-year period.	Shipping and navigation Study Area.

Source	Summary	Coverage of the Study Area
Incident data provided by the Royal National Lifeboat Institution (RNLI), RNLI 2011-2020	Provides details and locations of incidents reported by the RNLI over a 10-year period.	Shipping and navigation Study Area.
Incident data provided by the Marine Accident Investigation Branch (MAIB), MAIB 2012-2021	Provides details and locations of incidents reported by the MAIB over a 10-year period.	Shipping and navigation Study Area.
United Kingdom Hydrographic Office (UKHO) Admiralty charts 1552, 2010, 1320, 1346, 1411, and 1826.	Provides an overview of navigational features located in proximity to the Proposed Development.	International dataset providing coverage throughout the East Irish Sea.
UKHO Admiralty Sailing Directions West Coast of England and Wales Pilot NP37 21st Edition (UKHO, 2022)	Pilot book providing essential information to support port entry and coastal navigation for vessels including navigational hazards, buoyage, pilotage, regulations, general notes on countries, port facilities, seasonal currents, ice, and climatic conditions.	International dataset providing coverage throughout the East Irish Sea.
Manx Marine Environmental Assessment on Infrastructure – Chapter 6.2 (DoI, 2012)	Contains information relating to the commercial shipping and a wide range of other maritime activities in Manx Territorial Seas and provides a summary of the infrastructure and operations procedures that underpin the operations of the Isle of Man’s harbours	Shipping and navigation Study Area.

14.4.3 Summary of key receptors

14.4.3.4 Key receptors (defined as 'users' under MGN 654) for consideration in the NRA include all vessels transiting through the area either on regular routes or individual passages. The key shipping and navigation receptors identified within the shipping and navigation Study Area (as highlighted in Figure 14.2) are identified as follows:

- Commercial vessels (cargo vessels, tankers, passenger vessels, marine aggregate dredgers, tugs and other offshore support vessels undertaking commercial operations, particularly oil and gas and wind farm vessels);
- Military vessels;
- Commercial fishing vessels in transit;
- Recreational vessels (2.4-24 m length);
- Ports/ harbours and related services such as designated anchorages, pilotage; and
- Emergency responders.

14.4.4 Further data collection to be undertaken

14.4.4.4 The assessment of impacts arising from the Proposed Development on shipping and navigation will utilise vessel traffic survey data, historical incident data and sources such as those outlined in Table 14.1, and will be augmented by consultation during pre-application consultation.

14.4.4.5 AIS data over 2 x 14 days have been used to inform the baseline for this Scoping study. AIS data can be limited in terms of tracking small vessels, particularly fishing and recreational vessels. Therefore, site-specific surveys for the NRA are being conducted in compliance with MGN 654, with the first of these having been undertaken in August 2023 and the second currently scheduled for Q1 2024. Stakeholder consultation will also be undertaken to verify the baseline environment and a long-term AIS dataset (12 months) will be used both to validate the survey data and further assess any seasonality.

14.4.4.6 MAIB and RNLI historical incident data will be updated based on the latest available data at the time of the NRA being undertaken and assessed in detail to inform the risk.

14.4.4.7 Other data sources will include Admiralty Charts and Sailing Directions for the area, as well as statistics from nearby ports, harbours and marinas, where available.

14.4.4.8 Consultation and engagement with various stakeholders will also be used to verify the baseline environment to be considered in the assessment, and to identify additional data sources and impacts to be considered in the NRA. The results of the MGN 654 compliant Vessel Traffic Survey will be presented to stakeholders and in-depth consultation will be undertaken during the assessment stage with key stakeholders relevant to shipping and navigation. This will be done through dedicated stakeholder meetings through the Lifeline Services TAG as part of the Evidence Plan Process, regular operator outreach, and through a Hazard Workshop. The Hazard Workshop is a key element of the consultation phase which will give local, national and international marine stakeholders an opportunity to identify and discuss potential shipping and navigation hazards with feedback being incorporated into the NRA.

14.4.4.9 Key stakeholders for shipping and navigation include:

- DoI;

- Isle of Man Ship Registry;
- Northern Lighthouse Board (NLB) (the NLB is the General Lighthouse Authority for Scotland and the Isle of Man);
- RYA;
- UK Chamber of Shipping (who represent vessel operators based in the Isle of Man);
- RNLI;
- Cruising Association;
- MCA (due to proximity of UK waters);
- Local ports and harbours including Douglas and Ramsey;
- Liaison with relevant fishing users/ organisations via the FLO;
- Regular vessel operators identified by the vessel traffic data including the Isle of Man Steam Packet Company, Mezeron Shipping and Stena Line;
- Local marinas and yacht clubs; and
- Marine Navigation Engagement Forum.

14.4.4.10 It is noted that there is overlap between bodies representing the Territorial Seas of the Isle of Man and the UK given the international nature of shipping and navigation users.

14.4.5 Future baseline

14.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

14.5 Identification of impacts and effects

14.5.1 Key parameters for assessment

14.5.1.4 The shipping and navigation scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- The Offshore Array of 74 square nautical miles (nm²) (254 square kilometers (km²)) located 15 nm from shore in water depths of 10 to 37 m;
- The construction of up to 100 WTGs on one of various fixed foundation options and with a minimum rotor lower tip height of 30 m above LAT;
- The construction of up to five Offshore Substations (OSSs) within the Offshore Array on various fixed foundation options with associated seabed preparation and scour protection;
- The installation of up to 90 km of offshore export cables, 490 km of Array Cables, 100 km of Interlink Cables with each requiring cable protection along up to 15% of their total length;

- The regular maintenance of the structures throughout the lifetime of the Proposed Development; and
- Decommissioning of the site to remove all offshore structures above the seabed.

14.5.2 Commitments

14.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to shipping and navigation are described in Table 14.2 below.

Table 14.2: Relevant commitments to Shipping and Navigation.

ID	Measure proposed	How this measure will be secured	Rationale
Co2	Development of, and adherence to, an Asset Installation & Protection Plan (AIPP) detailing the quantities and installation methods for subsea infrastructure, informed by the CBRA.	MIC condition.	Minimises the risks of underwater allision with cable protection, anchor interaction with subsea cables and interference with magnetic position fixing equipment.
Co3	Cable burial will be the preferred method of cable protection, however where burial is not possible, requirements for additional cable protection will be determined through consultation with the relevant stakeholder.	MIC condition.	
Co5	Preparation and implementation of an Operation and Maintenance (O&M) Plan including a schedule of O&M activities.	MIC condition.	To set out and plan for scheduled maintenance activities during the operational life of the Proposed Development.
Co6	Development of a Decommissioning Programme.	MIC condition.	Minimises navigational safety risk for the decommissioning phase.
Co8	Promulgation of information to sea users via Notices to Mariners (NtMs) to DoI.	MIC condition.	Maximises awareness of the activities allowing vessels to passage plan in advance.
Co9	Establishment of offshore construction safety zones of up to 500 m around infrastructure during construction and major maintenance in the O&M phase.	MIC condition.	Protects third-party vessels from project vessels involved in construction and major maintenance activities which may be restricted in their ability to manoeuvre (RAM).
Co31	Implementation of 50 m advisory safety zones around operational offshore surface infrastructure.	MIC condition.	
Co32	Use of guard vessels and advisory safe passing distances for vessels where necessary.	MIC condition.	Maximises awareness of temporary hazards.

ID	Measure proposed	How this measure will be secured	Rationale
Co33	Development of, and adherence to, an AtoN Plan (ANP).	MIC condition.	To confirm compliance with legal requirements with regard to lighting and marking of structures for shipping, navigation and aviation purposes.
Co35	Development of a Search and Rescue (SAR) checklist carried out in accordance with Maritime Guidance Note (MGN) 654.	MIC condition.	Ensures the final array layout is suitable for SAR operations and that reductions in under keel clearance are acceptable
Co36	Development of, and adherence to, an Emergency Response Co-operation Plan (ERCoP) ensuring that requirements for planning of emergency responses at sea are met.	MIC condition.	To ensure requirements are met relating to emergency response planning for at-sea renewable energy installations and requirements for SAR helicopter operations in and around the Offshore Renewable Energy Installations (OREI).
Co37	Appropriate marking of the final positions of infrastructure on UKHO admiralty charts and aeronautical charts, including provision of detail regarding the positions and heights of structures to relevant stakeholders.	MIC condition.	Maximises awareness of the infrastructure allowing vessels to passage plan in advance.
Co42	Undertake marine co-ordination and communication with relevant stakeholders	MIC condition.	Maximises awareness of the infrastructure and temporary hazards with the stakeholder and the commercial fishing industry.
Co43	Marking and lighting of the site, including a buoyed construction area, in agreement with Northern Lighthouse Board (NLB).	MIC condition.	Maximises awareness in both day and night conditions including in restricted visibility and assists with SAR operations.
Co44	Compliance of all project vessels with international marine regulations as adopted by the Flag State, notably the COLREGS and SOLAS.	MIC condition.	Minimises the risk introduced due to the presence of project vessels.
Co45	Minimum blade tip clearance of at least 30 m above LAT.	MIC condition.	Minimises the risk of blade allision particularly for sailing vessels with a mast.

14.5.3 Approach to assessment of hazards

14.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on shipping and navigation at the scoping stage of the EIA / NRA process. The NRA will be prepared in accordance with MGN 654. MGN 654 identifies all potential hazards requiring assessment (whether they are likely to be significant or not) and provides a basis for the level of assessment that will be required.

- 14.5.3.5 The hazards may be updated as the NRA progresses noting that the Hazard Workshop is a key part of the process which may identify local hazards and risks associated with the development. As the Proposed Development progresses to application changes may be incorporated as a result of the iterative design process (including, but not limited to, the DAA; please see Chapter 5, EIA Methodology), responses to consultation via Scoping, the Lifeline Services TAG of the Evidence Plan Process and direct stakeholder engagement.
- 14.5.3.6 The Impacts Register (Annex 5.B) will be updated throughout the assessment process as the project progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.
- 14.5.3.7 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 14.2 above and in the Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage;
 - The evidence for effects on shipping and navigation based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified shipping and navigation lead.

14.6 Proposed approach to the EIA/ NRA

- 14.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on shipping and navigation associated with the Proposed Development that have (or do not have) the potential to result in LSE.
- 14.6.1.5 In line with the Scoping Strategy (Annex 5.C), for impacts which are assessed at the scoping stage as having the potential to result in LSE (as per the requirements of MGN 654, all shipping and navigation impacts identified will be considered), the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 14.7.2.
- 14.6.1.6 The approach to EIA/ NRA will deviate from the approach outlined in Chapter 5, EIA Methodology in order to meet NRA requirements. NRA is the primary assessment approach within the shipping and navigation industry. The Shipping & Navigation chapter of the ES will therefore consist of a full assessment undertaken in line with MGN 654 produced by the MCA, which contains the 'Methodology for Assessing Marine Navigational Safety and Emergency Response Risks'. This proposed proportionate approach to the assessment will ensure all legislative requirements are fulfilled by including consideration of both the requirements of MGN 654 in NRA terms, as well as legislative requirements and best practice in EIA terms.

14.7 Post-scoping

14.7.1 Overview

- 14.7.1.4 As per the requirements of MGN 654, all shipping and navigation impacts identified in the Impacts Register (Annex 5.B) will be considered. The proposed approach to these impacts is described further within section 14.7.2.

14.7.2 Next steps

Supporting studies

14.7.2.4 To inform the NRA, proportional quantitative modelling, including collision and allision risk modelling will be undertaken to assess the risk of the Proposed Development to vessels transiting the area. This will include modelling to assess the impacts as discussed in section 14.5.3. Modelling will account for the maximum design scenario to establish the worst-case impact on shipping and navigation, to allow for design changes within the design envelope to be taken at a later date.

Assessment methodology

14.7.2.5 The assessment will assess the potential impacts on shipping and navigation identified in the Impacts Register (Annex 5.B). The approach to assessment will deviate from the approach outlined in Chapter 5, EIA Methodology, in order to ensure it complies with the IMO's FSA (IMO, 2018), as set out in MCA guidance (Annex 1 to MGN 654 (MCA, 2021)) as the primary assessment tool. The methodology centres on risk control and will assess each impact in terms of both frequency and consequence in order to determine whether its significance is 'broadly acceptable', 'tolerable', or 'unacceptable'.

14.7.2.6 Assessment conclusions will also be presented in terms of their level of significance in EIA terms following the methodology outlined in Chapter 5, EIA methodology, in order to ensure compliance with EIA legislative requirements and best practice. These conclusions will also be described within the Impacts Register (Annex 5.B).

14.7.2.7 For shipping and navigation, impact significance will be determined by using a risk-ranking matrix assessing frequency and consequence. The frequency and consequence, as part of the NRA process, will be related to the parameters required by the IMO FSA and this approach will be agreed with stakeholders at the Hazard Workshop. The risk-ranking matrix is presented in Table 14.3. For the purposes of EIA, effects of 'unacceptable' significance would be deemed significant in EIA terms, while effects of 'tolerable' significance or below would be deemed non-significant in EIA terms.

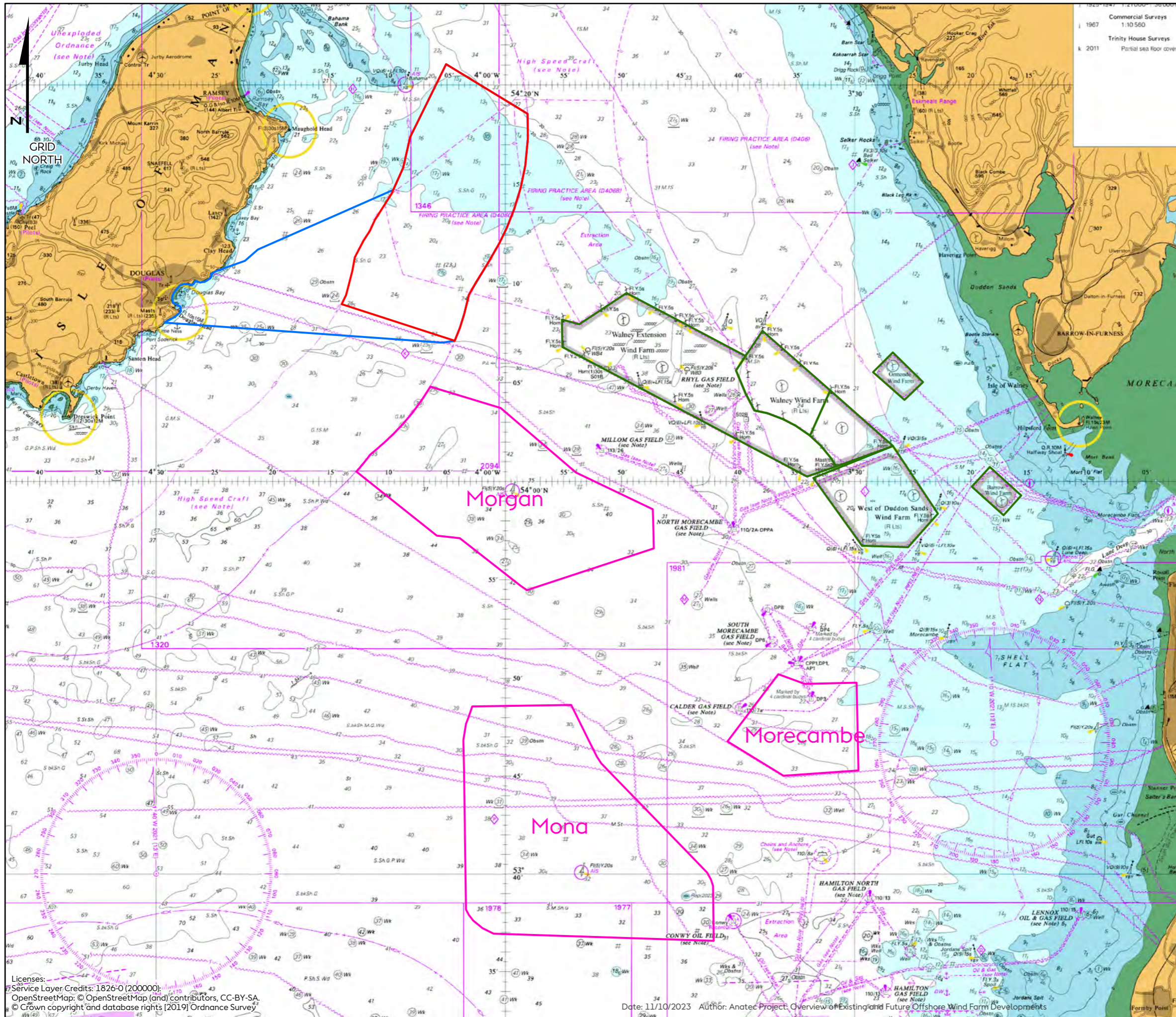
Table 14.3: Risk Ranking Matrix.

CONSEQUENCE	Major	Tolerable	Tolerable	Unacceptable	Unacceptable	Unacceptable
	Serious	Broadly Acceptable	Tolerable	Tolerable	Unacceptable	Unacceptable
	Moderate	Broadly Acceptable	Broadly Acceptable	Tolerable	Tolerable	Unacceptable
	Minor	Broadly Acceptable	Broadly Acceptable	Broadly Acceptable	Tolerable	Tolerable
	Negligible	Broadly Acceptable	Broadly Acceptable	Broadly Acceptable	Broadly Acceptable	Tolerable
	Negligible	Extremely Unlikely	Remote	Reasonably Probable	Frequent	
FREQUENCY						

14.7.2.8 Additional commitments (beyond those already embedded and listed in section 14.5.2) will be developed where necessary to reduce the risks to shipping and

navigation, ensuring that the significance of 'unacceptable' impacts are reduced, and 'tolerable' impacts are As Low As Reasonably Practicable (ALARP).

- 14.7.2.9 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on shipping and navigation receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the assessment.
- 14.7.2.10 The assessment will also consider interrelated effects on shipping and navigation receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.
- 14.7.2.11 A methodology will be outlined in the assessment for the screening of cumulative developments in/ out of the cumulative effects assessment, with a distance of up to 50 nm from the Offshore Array expected to be considered (depending upon the type of development). Cumulative effects (including Whole Project effects) will be assessed in accordance with this methodology and will be presented in the Impacts Register (Annex 5.B)
- 14.7.2.12 Impacts will be assessed for not only the Proposed Development in isolation but also on a cumulative basis. A methodology will be outlined in the NRA for the screening of cumulative developments in/out of the CEA which will include consideration of:
- Project status;
 - Distance to the Offshore Array;
 - Level of interaction with baseline traffic relevant to the Proposed Development;
 - Consultation feedback; and
 - Data confidence.
- 14.7.2.13 A maximum distance of 50 nm from the Offshore Array is expected to be considered (depending upon the type of development) since no clear impact pathway for shipping and navigation users is anticipated beyond this distance. A tiered approach to the CEA will be deployed to ensure realistic future cumulative scenarios are adequately addressed.
- 14.7.2.14 An overview of existing and future offshore wind farm developments is provided in Figure 14.3. A preliminary review indicates that the relevant cumulative developments are likely to be offshore wind farms: Morgan (1.4 nm south of the Offshore Array), Mona (10 nm south of the Offshore Array), and Morecambe (21 nm south east of the Offshore Array). Given the proximity and extent of these cumulative developments, Orsted intend to continue engaging with the developers to ensure that cumulative effects on shipping and navigation users are minimised.



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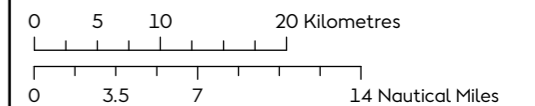
Figure 14.3

Overview of Existing and Future Offshore Wind Developments

- Offshore Array
- Offshore Electrical Connection Search Area
- Cumulative Offshore Wind Farms
 - Operational
 - Scoped



Coordinate System: WGS 1984 World Mercator
Scale@A3: 1:600,000



REV	REMARK	DATE
03	Updated Template	11/10/2023

Title: Overview of Existing and Future Offshore Wind Developments
Document no: IMWO1
Created by: DS
Checked by: JM
Approved by: SW



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14.8 Questions to Consultees

- Question 14.1: Do you agree with the Study Area that has been identified for shipping and navigation?;
- Question 14.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 14.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 14.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to shipping and navigation?;
- Question 14.5: Do you agree that the proposed approach to assessment is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained;
- Question 14.6: Do you agree that the application can be assessed with the submission of an NRA in line with MGN 654?;
- Question 14.7: Do you agree with the further data collection outlined in section 14.7 for informing the NRA?;
- Question 14.8: Do you agree that all receptors (users) related to shipping and navigation have been identified?; and
- Question 14.9: Does the Isle of Man have a mechanism for the establishment of offshore safety zones?

15 Seascape, Landscape & Visual Impact Assessment (SLVIA)

15.1 Introduction

- 15.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to seascape, landscape and visual amenity from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on seascape, landscape and visual amenity receptors.
- 15.1.1.2 Due to the visibility of the Proposed Development, this Chapter includes consideration of potential effects on receptors both within the Isle of Man, and transboundary effects on receptors within England and Scotland due to the proximity to those jurisdictions. This includes the anticipated visual effects upon views experienced by visual receptors and indirect effects on landscape character derived from the location of the Proposed Development in the seascape setting of these landscapes.
- 15.1.1.3 This Chapter considers the potential effects of the offshore components of the Proposed Development which includes Wind Turbine Generators (WTGs) and their associated foundations, Offshore Substations (OSSs) within the Offshore Array area, the Interlink Cables, Route to Market Transmission Assets, Offshore Electrical Connection Cables, and landfall (below MHW).
- 15.1.1.4 The Chapter has links with, and should therefore be read alongside:
- Chapter 22, Onshore Archaeology & Cultural Heritage, as the seascape setting of the island and the character of its landscape provide the visual setting for many of its heritage assets;
 - Chapter 26, Landscape & Visual Impact Assessment, which considers the landscape and visual impacts of the infrastructure of the Proposed Development that is landward of MLW; and
 - Chapter 28, Socio-economics, Tourism & Recreation, as the seascape setting of the island, the character of its landscape and the visual amenity provided by both are intrinsic to its appeal for visitors.

15.2 Legislation, policy and guidance

- 15.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- 15.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and

Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 15.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to Seascape, Landscape & Visual Impact Assessment (SLVIA). Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 15.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 15.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

15.2.2 Policy

National policy

- The Isle of Man Strategic Plan (2016) sets out national landscape policy which designates 'Areas of High Landscape or Coastal Value and Scenic Significance' (AHLVs). This designation is equivalent in levels of protection to Areas of Outstanding Natural Beauty, National Parks or Heritage Coasts within the UK. Environmental Policy 2 states that, within AHLVs, *"the protection of the character of the landscape will be the most important consideration"*. The Island Spatial Strategy Key Diagram (p29) shows that this designation covers the island's coastline; St John's, Greeba Valley and Crosby; and several National Glens: Sulby Glen, Glen Auldryn, Laxey Glen, and East and West Baldwin.

International policy

- As the Proposed Development has the potential to alter the seascape context of the Lake District National Park, there is potential for effects upon its landscape character, special qualities and Outstanding Universal Value that are protected by Policy 1 and Policy 7 of the Lake District National Park's Local Plan 2020 to 2035 which aims to safeguard the National Park's Special Qualities and its attributes of Outstanding Universal Value.

15.2.3 Guidance

International guidance

- The primary source of guidance for seascape and landscape impact assessment is the 'Guidelines for Landscape and Visual Impact Assessment. Third edition' (Landscape Institute with the Institute of Environmental Management and Assessment, 2013), hereafter 'GLVIA3'. Further relevant guidance concerns the definition of Study Areas, Zones of Theoretical Visibility (ZTVs) and preparation of visualisations for wind farm development (NatureScot, 2017a); assessment of landscape value outside national designations (Landscape Institute, 2021); assessment of effects on the Special Qualities of National Scenic Areas (NatureScot, 2018a); coastal character assessment (NatureScot, 2018b); and additional guidance for onshore wind farms, that may also be relevant to

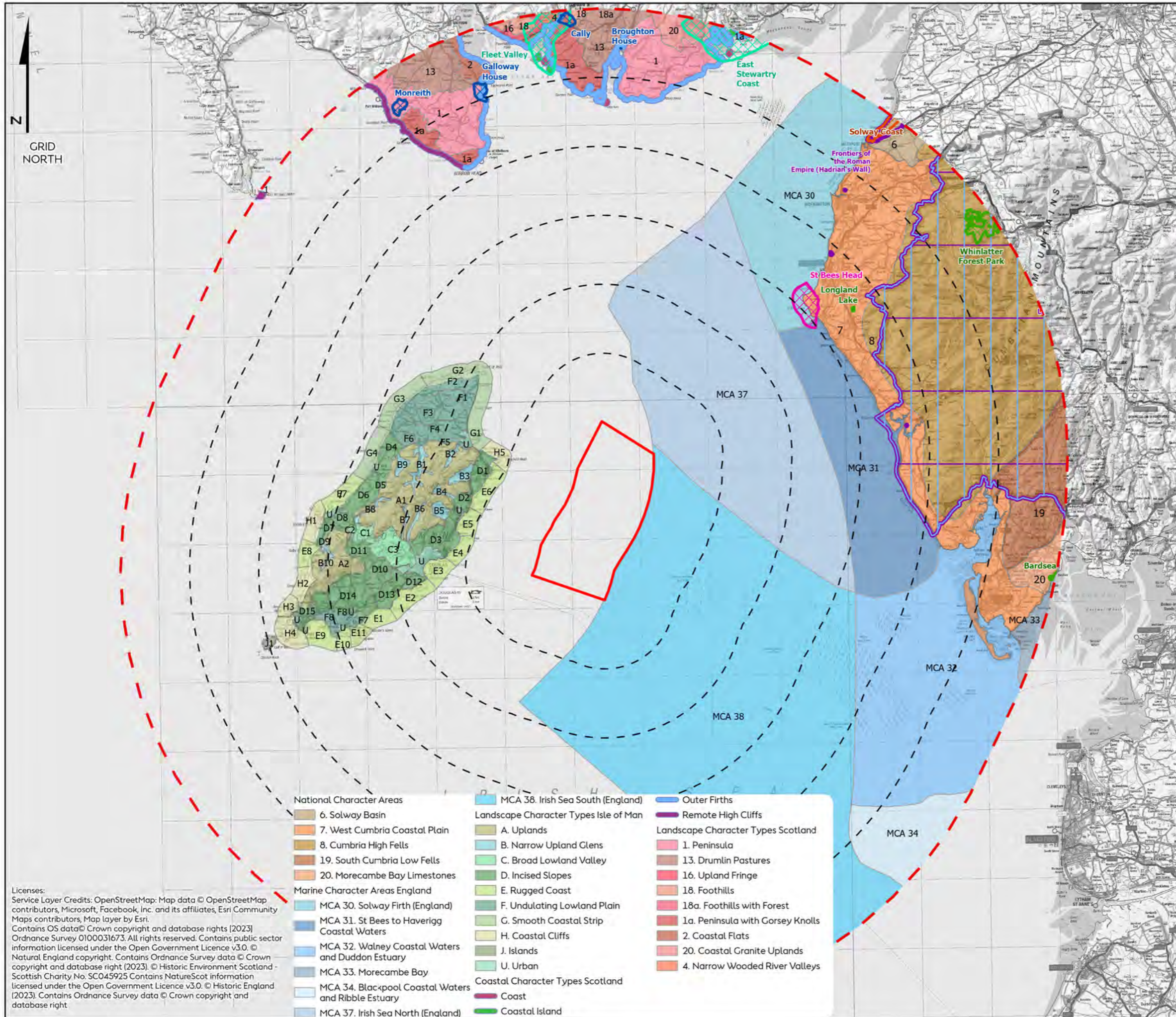
offshore wind farm siting and design (NatureScot, 2017b); cumulative assessment (NatureScot, 2021); and assessing landscape value outside of national designations (Landscape Institute 2021).

15.3 Study Area

15.3.1 Seascape, Landscape and Visual Impact Assessment (SLVIA) Study Area

- 15.3.1.4 The SLVIA Study Area has been defined on the basis of the extent of potential LSE arising from the key construction and operational elements of the offshore infrastructure of the Proposed Development which are the WTGs and the OSSs and is defined by a radius of 60 kilometres (km) from the Offshore Array area boundary. Figure 15.1 shows the SLVIA Study Area, which broadly covers the Isle of Man, the eastern Irish Sea; the south coast of Dumfries and Galloway in Scotland; and the coast of Cumbria in north-west England. Informed by professional judgement, a 60 km SLVIA Study Area is defined as the outer limit of the area where significant visual effects could occur.
- 15.3.1.5 IEMA Guidance (IEMA, 2015; 2017) recommends a proportionate EIA focused on the significant effects and a proportionate EIA report chapter. An overly large SLVIA Study Area may be considered disproportionate if it makes the understanding of the key impacts of the Proposed Development more difficult. This is supported by GLVIA3 (paragraph 3.16, Landscape Institute, 2013) which recommends that: *“the level of detail provided should be that which is reasonably required to assess the likely significant effects”*.
- 15.3.1.6 GLVIA3 (paragraph 5.2) also states that: *“the Study Area should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner”*.
- 15.3.1.7 Other wind farm specific guidance, such as NatureScot's Visual Representation of Wind Farms Guidance (NatureScot, 2017), recommends that ZTV distances are used for defining the SLVIA Study Area based on WTG height. This guidance recommends a 45 km radius for WTGs greater than 150 metres (m) to blade tip, above LAT, but doesn't cover WTGs above 150 m in height. The height of current offshore WTG models now exceeds the heights covered in this guidance which recognises that greater distances may need to be considered for larger WTGs used offshore, as is the case for the Proposed Development's SLVIA Study Area. A precautionary approach is taken in defining a 60 km radius SLVIA Study Area for the offshore infrastructure based on a worst case scenario in SLVIA terms, comprising the maximum spatial envelope for the Proposed Development based on the extent of the Offshore Array area and the proposed WTGs' 389m above LAT (385 m above Mean Sea Level (AMSL)) blade tip height.
- 15.3.1.8 The SLVIA will focus on locations from where it may be possible to see the offshore infrastructure, as defined by the Blade Tip ZTV (see Figure 15.2).
- 15.3.1.9 This indicates that theoretical visibility of the offshore infrastructure mainly occurs within 60 km and that beyond this distance, the geographic extent of visibility may become increasingly restricted. At distances over 60 km, the lateral (or horizontal) spread of the offshore infrastructure may occupy a small portion of available views and the apparent height (or 'vertical angle') of the WTGs may also appear very small; therefore, significant visual effects are unlikely to arise at greater than this distance, even if the WTGs are visible.
- 15.3.1.10 At long distances (such as over 60 km), the influence of earth curvature begins to limit the apparent height and visual influence of the WTGs, as their lower parts would be partially hidden behind the apparent horizon, leaving only the upper parts visible above the skyline.

- 15.3.1.11 In considering the SLVIA Study Area, the sensitivity of the receiving seascape, landscape and visual receptors has also been reviewed, taking account of landscape designations and other visual receptors. The Offshore Array is located approximately 11 km from the nearest point of the Isle of Man (Maughold Head Head). Theoretical visibility of the offshore infrastructure from locations along this eastern coastline of the Isle of Man, which includes the Manx capital, Douglas and several national glens, makes this area susceptible to the seascape and visual effects of the offshore infrastructure.
- 15.3.1.12 It is proposed that the assessment of effects arising from the offshore infrastructure beyond 60 km of the Offshore Array area is omitted from the SLVIA chapter of the EIA, as there are unlikely to be significant effects. The SLVIA Study Area will be reviewed and amended in response to refinement of the offshore infrastructure as the design of the Proposed Development develops, the identification of additional impact pathways and in response, where appropriate, to feedback from consultation and ongoing engagement with stakeholders.



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Figure 15.1: SLVIA Study Area

- Offshore Array
- 10km Radii
- 60km Study Area
- Garden and Designed Landscape
- National Scenic Area
- Area of Outstanding Natural Beauty
- Country Park
- Heritage Coast
- Lake District National Park
- World Heritage Site



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:545,000
0 4.75 9.5 19 Kilometers
0 1.75 3.5 7 Nautical Miles

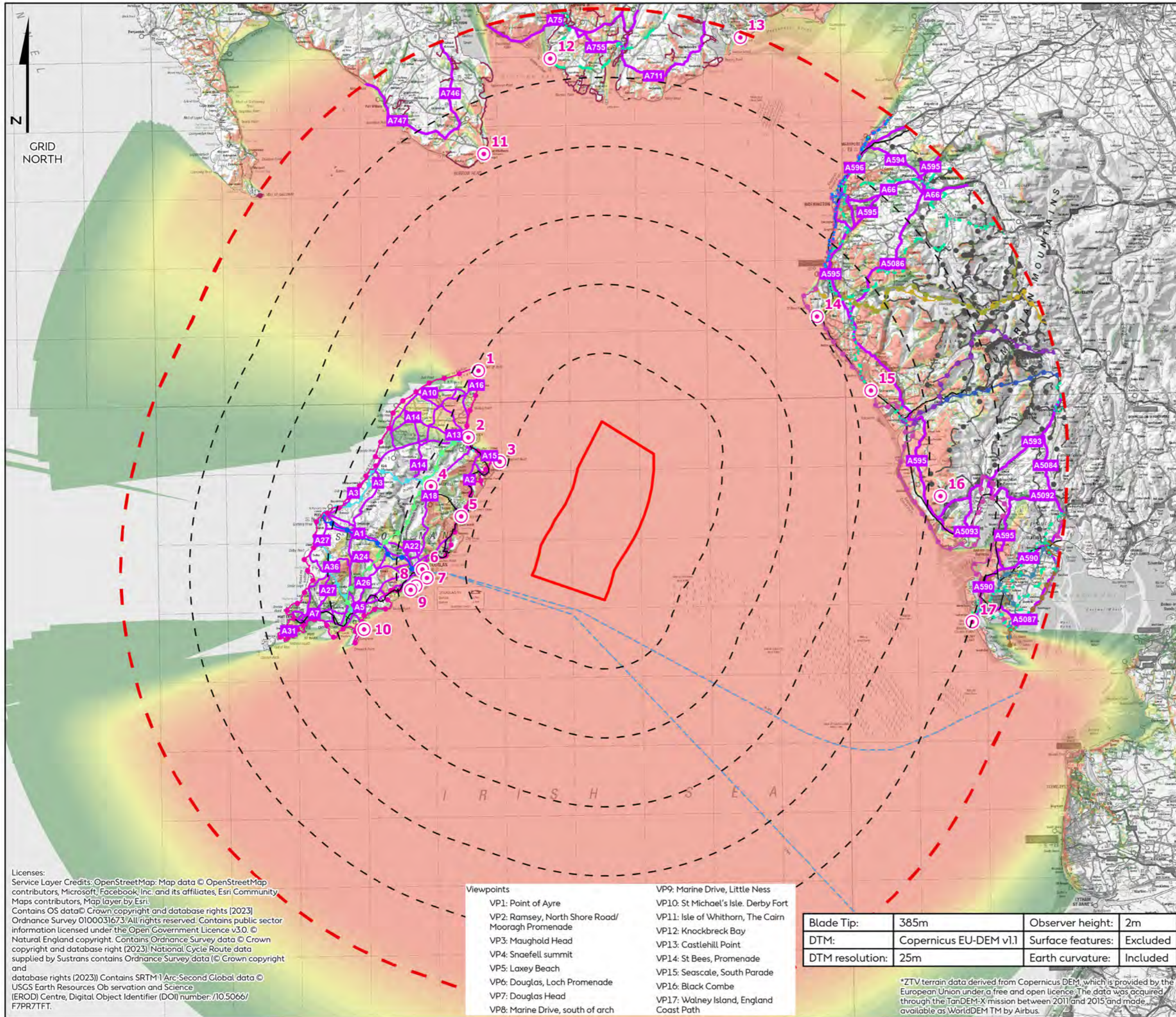
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- | | | |
|---|--|---|
| National Character Areas | MCA 38. Irish Sea South (England) | Outer Firths |
| 6. Solway Basin | Landscape Character Types Isle of Man | Remote High Cliffs |
| 7. West Cumbria Coastal Plain | A. Uplands | Landscape Character Types Scotland |
| 8. Cumbria High Fells | B. Narrow Upland Glens | 1. Peninsula |
| 19. South Cumbria Low Fells | C. Broad Lowland Valley | 13. Drumlin Pastures |
| 20. Morecambe Bay Limestones | D. Incised Slopes | 16. Upland Fringe |
| Marine Character Areas England | E. Rugged Coast | 18. Foothills |
| MCA 30. Solway Firth (England) | F. Undulating Lowland Plain | 18a. Foothills with Forest |
| MCA 31. St Bees to Haverigg Coastal Waters | G. Smooth Coastal Strip | 1a. Peninsula with Gorse Knolls |
| MCA 32. Walney Coastal Waters and Duddon Estuary | H. Coastal Cliffs | 2. Coastal Flats |
| MCA 33. Morecambe Bay | J. Islands | 20. Coastal Granite Uplands |
| MCA 34. Blackpool Coastal Waters and Ribble Estuary | U. Urban | 4. Narrow Wooded River Valleys |
| MCA 37. Irish Sea North (England) | Coastal Character Types Scotland | |
| | Coast | |
| | Coastal Island | |

Figure 15.1: SLVIA Study Area
Document no: IMW01
Created by: NL
Checked by: HB
Approved by: SM





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Figure 15.2: Blade tip Zone of Theoretical Visibility and Key Visual Receptors

- ▭ Offshore Array
- 10km Radii
- 60km Study Area
- Viewpoint
- Primary and A Road
- Railway Track
- Core Path
- Ferry Route
- National Cycle Route
- Coastal Path Route
- Allonby to Whitehaven
- Isle of Man Long Distance Walking Route
- Heritage Trail
- Millennium Way
- Raad Ny Foillan (Isle of Man Coastal Path)
- Triskelion Way
- Long Distance Walking Route
- Bay to Bay Walk
- Cistercian Way
- Coast to Coast
- Cumbria Coastal Way
- Eastern Hadrianic Way
- Grassington to WestCoast
- Mull of Galloway Trail
- Ravenber Way
- St Begas Way
- Lake District Long Distance Walking Routes
- Zone of Theoretical Visibility
- High Visibility
- Low Visibility



Coordinate System: ETRS 1989 UTM Zone 30N
 Scale@A3: 1:545,000
 0 4.75 9.5 19 Kilometers
 0 1.75 3.5 7 Nautical Miles

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Viewpoints	
VP1: Point of Ayre	VP9: Marine Drive, Little Ness
VP2: Ramsey, North Shore Road/Mooragh Promenade	VP10: St Michael's Isle, Derby Fort
VP3: Maughold Head	VP11: Isle of Whithorn, The Cairn
VP4: Snaefell summit	VP12: Knockbreck Bay
VP5: Laxey Beach	VP13: Castlehill Point
VP6: Douglas, Loch Promenade	VP14: St Bees, Promenade
VP7: Douglas Head	VP15: Seascale, South Parade
VP8: Marine Drive, south of arch	VP16: Black Combe
	VP17: Walney Island, England Coast Path

Blade Tip:	385m	Observer height:	2m
DTM:	Copernicus EU-DEM v1.1	Surface features:	Excluded
DTM resolution:	25m	Earth curvature:	Included

*ZTV terrain data derived from Copernicus DEM, which is provided by the European Union under a free and open licence. The data was acquired through the TanDEM-X mission between 2011 and 2015 and made available as WorldDEM TM by Airbus.

Figure 15.2: Blade tip Zone of Theoretical Visibility and Key Visual Receptors
 Document no: IMW01
 Created by: NL
 Checked by: HB
 Approved by: SM

15.4 Baseline

15.4.1 Overview of baseline

15.4.1.4 The majority of the SLVIA Study Area comprises Manx, Scottish and English waters within the Irish Sea. The SLVIA Study Area also encompasses terrestrial areas comprising the Isle of Man and parts of the Scottish coastline, within Dumfries and Galloway; and the coastline of north-west England, within Cumbria.

Isle of Man

Seascape Character

15.4.1.5 There is no published characterisation of the offshore seascape character of the Isle of Man. However, coastal landscapes have been characterised within the 'Isle of Man Landscape Character Assessment' (Chris Blandford Associates, 2008) (Figure 15.1), which will be used to inform the assessment of effects on seascape within the EIA and will be extended or updated as required (refer to section 15.4.1.5).

Landscape Character

15.4.1.6 Landscape Character Type (LCT) descriptions within the 'Isle of Man Landscape Character Assessment' (Chris Blandford Associates, 2008) (Figure 15.1) will form the basis of the baseline landscape character description of the SLVIA Study Area and the assessment of the visual aspects of perceived character resulting from the Proposed Development.

Seascape/ Landscape Planning Designations

15.4.1.7 There are terrestrial areas within the SLVIA Study Area that have been attributed a landscape planning designation and some of these include areas of sea, close to the coast. In the Isle of Man, this includes AHLVs, defined by the Isle of Man Strategic Plan 2016, which encompass much of the coastline and two broad inland areas. Many of the Island's 18 National Glens lie on the coast and/ or within AHLVs.

Visual Baseline

15.4.1.8 The principal visual receptors in the SLVIA Study Area are likely to be found along the sections of coastline closest to the Offshore Array areas. These include people within settlements, visiting tourist facilities or historic environment assets; engaged in recreational activity, such as walking or cycling; and driving on roads. An assessment will be undertaken in the SLVIA for those visual receptors that are most susceptible to visual changes arising from the Proposed Development and which may experience significant visual effects due to it.

15.4.1.9 The SLVIA will focus on visual receptors at locations where the sea is a strong influence in the baseline view, along the eastern seaboard of the Isle of Man, and within the immediate hinterland.

15.4.1.10 Table 15.3 lists representative viewpoints within the Isle of Man for assessment in the SLVIA.

Scotland and England

Seascape Character

15.4.1.11 Coastal characterisation of the Scottish coastline within 'An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms', (Scott, K.E. *et al.* 2005); and seascape characterisation of English waters within Marine Management Organisation (MMO) 1134: 'Seascape Character Assessment for the North West Inshore and Offshore marine plan areas' (MMO, 2018) will inform the assessment of effects of the Proposed Development on seascape character.

Landscape Character

15.4.1.12 LCT descriptions within 'Scottish Landscape Character Types Map and Descriptions' (NatureScot, 2019); and National Character Area (NCA) descriptions (Natural England, 2023) (Figure 15.1) will form the basis of the baseline landscape character description of the SLVIA Study Area and the assessment of the visual aspects of perceived character resulting from the Proposed Development. Within the relevant NCAs, this will include LCTs within Cumbria (Cumbria County Council, 2011); and the Lake District National Park (Lake District National Park Authority, 2021).

Seascape/ Landscape Planning Designations and Defined Areas

15.4.1.13 There are no designations specifically to protect the character of the seascape. St Bees Head Heritage Coast is a defined area that lies south of Whitehaven. Heritage coasts not within one of the designated areas mentioned in paragraph 176 of the National Planning Policy Framework (September 2023) are protected by Paragraph 78, which states that *"planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character."*

15.4.1.14 Terrestrial areas that have been attributed a landscape planning designation along the Dumfries and Galloway coast include Fleet Valley and East Stewartry Coast National Scenic Areas (NSA); and Monreith, Galloway House and Cally Gardens and Designed Landscapes (GDLs). The Lake District National Park and World Heritage Site (WHS) are designated in the eastern part of the SLVIA Study Area, covering the Cumbrian mountains and parts of the coastline.

Visual Baseline

15.4.1.15 The SLVIA will focus on visual receptors at locations where the sea is a strong influence in the baseline view, along the southern coastline of Dumfries and Galloway and the Cumbrian coastline.

15.4.2 Data sources

15.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 15.1.

Table 15.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Chris Blandford Associates (2008), 'Isle of Man Landscape Character Assessment'.	Provides an island-wide assessment of landscape character to inform land use planning and landscape management decisions, including the four Area Plans produced for the Island as a whole.	Isle of Man
Isle of Man Government (2016), 'Isle of Man Strategic Plan 2016'	Identifies and maps Areas of High Landscape Value and Scenic Sensitivity which are protected by planning policy.	Isle of Man
Isle of Man Government (2023), 'Isle of Man Transport'.	Information about the Isle of Man's transport network, timetables, routes and fares. Includes heritage railways.	Isle of Man
Isle of Man Government (2023) 'National Glens'.	Identifies glens preserved and maintained in a semi-natural state by the Forestry, Amenity and	Isle of Man

Source	Summary	Coverage of the Study Area
	Lands Division of DEFA which are freely accessible.	
Scott, K.E. et al. (2005), 'An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms' Scottish Natural Heritage Commissioned Report No.103 (ROAME No. F03AA06).	Maps the baseline character of the Scottish seascape at a strategic level and provides descriptions of its character as part of an assessment of seascape issues surrounding offshore windfarm developments to better inform the consideration of offshore windfarm development proposals for policy formulation and decision making.	Scottish waters
NatureScot (2019), 'Scottish Landscape Character Types Map and Descriptions'.	Maps and describes the baseline character of Scotland's landscape.	Scotland.
Historic Environment Scotland (2023), 'Gardens and Designed Landscapes'.	Mapping of Historic Environment Scotland's Inventory of Gardens and Designed Landscapes.	Scotland.
National Trust for Scotland (2023), 'Places'.	Any specific visitor attractions or tourist destinations	Scotland.
Marine Management Organisation (2018) 'MMO 1134: Seascape Character Assessment for the North-West Inshore and Offshore marine plan areas'.	Identifies, maps, classifies and describes the baseline character of the English seascape within a single, unified Geographical Information System (GIS) data layer and a national map of seascape character for all marine plan areas in England.	Study Area.
Lake District National Park Authority (2021). 'Lake District National Park Landscape Character Assessment and Guidelines'.	Identifies, maps, classifies and describes the baseline character and special qualities of the Lake District National Park.	Study Area.
English Heritage (2023), 'Places to Visit'.	Any specific visitor attractions or tourist destinations	Study Area.
Cumbria County Council (2011), 'Cumbria Landscape Character Guidance and Toolkit Part One Landscape Character Guidance'.	Identifies, maps, classifies and describes the elements and features that make up the Cumbrian landscape's baseline character outside the Lake District National Park.	Study Area.
Google Earth Pro (2023).	Aerial photography	Study Area.
Long Distance Walkers Association (2023), 'Overview Map for Paths and Walks'.	Overview map for Long Distance Paths and Walks.	England, Scotland and the Isle of Man.
National Trust (2023), 'Visit'.	Any specific visitor attractions or tourist destinations	England.
National Trust for Scotland (2023), 'Visit'.	Any specific visitor attractions or tourist destinations	Scotland.
Ordnance Survey (2023), 1:50,000 scale mapping.	Mapping	Study Area.
Ordnance Survey (2023), 1:20,000 scale mapping.	Mapping	Study Area.

Source	Summary	Coverage of the Study Area
Ordnance Survey (2023), County Region, Local Unitary Authority, Railways, Road and Settlements.	GIS datasets	Study Area.
Ordnance Survey (2023), Terrain 50 Digital Terrain Model.	Digital Terrain Model.	Study Area.
Ordnance Survey (2023), Terrain 5 Digital Terrain Model.	Digital Terrain Model.	Study Area.
Sustrans (2023), National Cycle Network.	GIS dataset of signed on road and traffic free cycling routes across the UK.	Study Area.

15.4.3 Summary of key receptors

Isle of Man

15.4.3.4 The key seascape, landscape and visual receptors in the Isle of Man are summarised as follows:

- Seascape Character of the Isle of Man’s eastern seaboard between the Point of Ayre and Langness: The Proposed Development would be located within the eastern Irish Sea and may directly affect its seascape character. Visibility of the Proposed Development may affect the perceived character of the inshore seascapes and adjoining coastline.
- Landscape Character of the Isle of Man’s eastern seaboard between the Point of Ayre and Langness: The Proposed Development would be located within the seascape setting of the Isle of Man’s landscape, and visibility of the Proposed Development may alter the perceived character of the island’s landscape.
- Perceived character and/ or special qualities of designated landscapes: The Proposed Development would be located within the seascape setting of designated landscapes, including AHLVs, and may have a visual impact on their landscape character or special qualities.
- Residential receptors within the main settlements along the island’s eastern seaboard (Ramsey, Laxey, Douglas and Ballasalla): The Proposed Development would be located within the seascape setting of these settlements and may have a visual impact on the views experienced by their residents and their visual amenity.
- Transient receptors on the network of 'A' roads, particularly the A2/ Ramsey Road and the A18/ Mountain Road: The Proposed Development would be located within the seascape setting of the island and may have a visual impact on views experienced by users of these roads, particularly along the coast.
- Recreational receptors using recreational routes, particularly those along the coast, such as the Manx Electric Railway: The Proposed Development would be located within the seascape setting of the island and may have a visual impact on views experienced by users of these routes.
- Recreational receptors on long distance walks or cycle routes, particularly those along the coast, such as the *Raad ny Foillan*: The Proposed Development would

be located within the seascape setting of the island and may have a visual impact on views experienced by users of these routes.

- Receptors at specific visitor attractions, such as Great Union Camera Obscura: The Proposed Development would be located within the setting of these attractions and views from them and visual amenity may be affected by the Proposed Development.

Representative Viewpoints

15.4.3.5 Table 15.2 presents a list of viewpoints, based on the ZTV for the Proposed Development (Figure 15.2), that are representative of the key receptors listed above. The viewpoints represent locations within the SLVIA Study Area at which sensitive visual receptors have potential to be significantly affected. The selection of the viewpoints considers the representation of different coastal, seascape and landscape character receptors, within which they are located; and the surrounding context so that the visual assessment can inform the wider assessment. While the aim is to achieve a distribution of viewpoints from different directions and distances across the SLVIA Study Area, the priority is to ensure that the closer range or most sensitive receptors with the greatest potential to be significantly affected are fully represented. The viewpoint locations will be micro-sited during photography field work to ensure suitable locations are used. These representative viewpoints have been agreed with the Isle of Man Government, however, comments from stakeholders on the viewpoint locations are invited within section 15.8 as part of this request for a Scoping Opinion. Visualisations and figures will be produced to NatureScot's standards as set out in 'Visual Representation of Wind farms: Version 2.2' (NatureScot, 2017).

Table 15.2: Representative Viewpoints in the Isle of Man.

Viewpoint (VP)	Distance, Direction from Offshore Array	Easting	Northing	Rationale for inclusion
VP1: Point of Ayre	19.3 km, NW	246837	504620	Most northerly point of the Isle of Man; with OS mapped viewpoint, on long-distance coastal footpath Raad ny Foillan and Nature Trail from Ayres Visitor Centre.
VP2: Ramsey, North Shore Road/ Mooragh Promenade	16.5 km, W	245229	494964	Promenade and coast road on sea front of main town within north of the island, adjoining residential edge and near popular Mooragh Park.
VP3: Maughold Head	11.2 km, W	249731	491387	Most easterly point of the Isle of Man and closest point to Offshore Array area; with OS mapped viewpoint, on long-distance coastal footpath Raad ny Foillan.
VP4: Snaefell summit	18.3 km, W	239718	487968	Highest point on Isle of Man (621m); with OS mapped viewpoint, near summit station of Snaefell Mountain Railway; popular visitor destination

Viewpoint (VP)	Distance, Direction from Offshore Array	Easting	Northing	Rationale for inclusion
VP5: Laxey Beach	12.4 km, WSW	244037	483531	Promenade and coast road on sea front of key settlement between Douglas and Ramsey.
VP6: Douglas, Loch Promenade	16.2 km, SW	238311	475963	Promenade and coast road and Douglas Horse Tramway on sea front of Manx capital; popular with visitors; high number of visual receptors, on long-distance coastal footpath Raad ny Foillan with iconic views of Onchan Hea, Tower of Refuge and Douglas Head. Gateway to island at Isle of Man Steam Packet ferry terminal. Terminus of Manx Electric Railway and Douglas Bay Horse Tramway.
VP7: Douglas Head	15.6 km, SW	238958	474733	Elevated OS mapped viewpoint; popular with visitors; high number of visual receptors, on long-distance coastal footpath Raad ny Foillan with iconic view across Douglas Bay and Tower of Refuge to Onchan Head.
VP8: Marine Drive, south of arch	17.3 km, SW	237334	473583	Elevated OS mapped viewpoint; popular with visitors; high number of visual receptors, on long-distance coastal footpath Raad ny Foillan.
VP9: Marine Drive, Little Ness	18.2 km, SW	236568	473031	Elevated OS mapped viewpoint; popular with visitors; high number of visual receptors, on long-distance coastal footpath Raad ny Foillan.
VP10: St Michael's Isle, Derby Fort	26.2 km, SW	229672	467385	OS mapped viewpoint; on long-distance coastal footpath Raad ny Foillan.

Scotland and England

15.4.3.6 The key seascape, landscape and visual receptors in Scotland and England are summarised as follows.

- Seascape Character of the eastern Irish Sea and adjoining coastline: The Proposed Development would be located within the eastern Irish Sea and visibility of the Proposed Development may affect the perceived character of the inshore seascapes and adjoining coastlines of the UK mainland. This includes the Scottish waters of Luce Bay, Wigton Bay, Kirkcudbright Bay and the outer Solway Firth, and the adjoining coastline of Dumfries and Galloway from Mull o'Galloway to Rockcliffe. In England, this includes English waters within the outer Solway Firth, Duddon Estuary and part of Morecambe; and the adjoining coastline of Cumbria, from south of Allonby to the southern end of Walney Island.

- Landscape Character of the coastal landscapes adjoining the eastern Irish Sea: The Proposed Development would be located within the seascape setting of the UK mainland adjoining the Irish Sea. Visibility of the Proposed Development may alter the visual context of the coastal landscapes of Dumfries and Galloway, in Scotland; and Cumbria, in England, and potentially may affect the perceived character of these landscapes.
- Landscape Planning Designations and Defined Areas: The Proposed Development would be located within the seascape setting of designated landscapes and may have a visual influence on their character or special qualities. This includes National Scenic Areas (NSAs), and GDLs, within Scotland; and Heritage Coast, WHSs, National Parks, Areas of Outstanding Natural Beauty (AONBs), and Parks and Gardens within England.
- Residential receptors within the main settlements along the coastline of the UK mainland: The Proposed Development would be located within the seascape setting of these settlements, such as Barrow in Furness and Whitehaven, and may have a visual impact on the views experienced by their residents and their visual amenity.
- Transient receptors on the network of 'A' roads, particularly the A595: The Proposed Development would be located within the seascape setting of the UK mainland and may have a visual impact on views experienced by users of these roads, particularly along the coast.
- Recreational receptors on long distance walks and cycle routes, particularly those along the coast, such as the England Coast Path/ Cumbrian Coastal Way: The Proposed Development would be located within the seascape setting of north-west England and may have a visual impact on views experienced by users of these routes.

Representative Viewpoints

15.4.3.7 Table 15.3 presents a list of proposed viewpoints, based on the ZTV for the Proposed Development (Figure 15.2), that are representative of the key receptors listed above and suggested for the purposes of transboundary consultation with relevant stakeholders including local planning authorities, NatureScot and Natural England.

Table 15.3: Proposed Representative Viewpoints on the UK mainland.

Viewpoint	Distance, Direction from Array Area	Easting	Northing	Rationale for inclusion
<i>Scotland</i>				
VP11: Isle of Whithorn, The Cairn	42.6 km, NWN	248056	536048	Closest point on Dumfries and Galloway coastline.
VP12: Knockbreck Bay	53.3 km, N	257858	549739	Within Fleet Valley NSA.
VP13: Castlehill Point	59.2 km, NE	285439	552409	OS mapped viewpoint within East Stewartry Coast NSA, on core path.
<i>England</i>				

Viewpoint	Distance, Direction from Array Area	Easting	Northing	Rationale for inclusion
VP14: St Bees, Promenade	31.0 km, ENE	296033	511783	Pedestrian promenade in seaside town, popular with visitors; unobstructed views of open sea.
VP15: Seascale, South Parade	32.8 km, E	303692	500937	Coast road on sea front of town, adjoining residential edge, on route of England Coastal Path, National Cycle Route and railway line.
VP16: Black Combe	41.8 km, ESE	313542	485488	High point within coastal part of Lake District National Park.
VP17: Walney Island, England Coast Path	50.1 km, SE	317892	467241	Pedestrian promenade at seaside town, on England Coast Path; unobstructed views of open sea.

15.4.4 Further data collection to be undertaken

- 15.4.4.4 For those receptors where a detailed assessment is required, primary data acquisition will be undertaken through a series of surveys. These surveys will include field survey verification of the ZTV from LCTs, micro-siting of viewpoint locations, panoramic baseline photography and visual assessment survey from all representative viewpoints (as listed in Table 15.2 and Table 15.3).
- 15.4.4.5 Viewpoint photography and visual assessment surveys is anticipated to start during winter 2023 to spring/summer 2024 subject to appropriate weather conditions.
- 15.4.4.6 Further visual assessment surveys are then likely to be undertaken prior to preparation of the EIA with reportage within the EIA, using the photomontage visualisations to undertake field survey assessment of visual effects from each representative viewpoint. Sea based offshore surveys are not proposed to be undertaken as part of the SLVIA, because of the low likelihood of significant visual effects at sea due to the number of existing WTGs within the seascape context of the Proposed Development.

15.4.5 Future baseline

- 15.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

15.5 Identification of impacts and effects

15.5.1 Key parameters for assessment

- 15.5.1.4 Chapter 3, Project Description, provides a full description of the Proposed Development. The seascape, landscape and visual amenity scoping study is based on the construction, operation and maintenance, and decommissioning of the following offshore project infrastructure:
- A maximum of 100 WTGs with a height to blade tip of up to 389 m above LAT and up to five OSSs with a height of 100 m above LAT and maximum dimensions

of 180 m x 90 m, the Interlink Cables, Route to Market Transmission Assets, Offshore Electrical Connection Cables, and landfall (below MHW).

- 15.5.1.5 Construction and decommissioning phase impacts may arise as a result of the construction/ decommissioning activities, including the presence of jack-up vessels and/ or heavy lift vessels for the installation/ removal of foundations, substructures and WTGs or OSSs; windfarm service vessels and accommodation vessels; and partially constructed/ decommissioned offshore elements.
- 15.5.1.6 Operation and maintenance phase impacts may arise due to visibility of the offshore infrastructure and related maintenance vessel activity from surrounding areas of the seascape and landscape. These effects would only result from visibility of above-sea elements, including lighting at night such as aviation light markers, activity and safety lighting, and CAA and marine navigation lighting.
- 15.5.1.7 Due to the nature of the Proposed Development and evolving technology there is uncertainty regarding its final detailed design. To accommodate this, it is proposed that the assessment of effects arising from the offshore infrastructure will be based on a 'Design Envelope' approach following the Scottish Government's Guidance for applicants on using the design envelope for applications under section 36 of the Electricity Act 1989 (2022) and the Planning Inspectorate's Advice Note Nine: Rochdale Envelope (2018).

15.5.2 Commitments

- 15.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to SLVIA are described in Table 15.4 below.

Table 15.4: Relevant commitments to seascape, landscape and visual amenity.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the Proposed Development.
Co43	Marking and lighting of the site, including a buoyed construction area, in agreement with Northern Lighthouse Board (NLB).	MIC Condition	To meet the requirements of IALA Recommendation O-139 and Guidance G1162. This would limit lighting impacts as far practicable, whilst ensuring compliance with legal requirements for lighting and marking of the offshore infrastructure.

15.5.3 Approach to assessment of likely significant effects

- 15.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on seascape and landscape receptors at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It

identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

- 15.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.
- 15.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 15.4 above and in the Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage;
 - The evidence for effects on SLVIA based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified SLVIA lead.

15.6 Proposed approach to the EIA

- 15.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on seascape, landscape and visual amenity associated with the Proposed Development that have (or do not have) the potential to result in LSE.
- 15.6.1.5 In line with the Scoping Strategy (Annex 5.C):
- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 15.7.2; and
 - **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 15.7.3.
- 15.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 15.6.1.7 For SVLIA, the assessment of impacts will also follow specific guidance. This is further detailed within section 15.7.3 below.
- 15.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

15.7 Post-scoping

15.7.1 Overview

15.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For SLVIA, the scoping study has identified:

- One impact which has the potential to result in No LSE; and
- Nine impacts which have the potential to result in LSE.

15.7.2 No LSE and next steps

15.7.2.4 Regarding the impacts of the Offshore Electrical Connection Cables and associated vessel activity during construction, operation and maintenance, and decommissioning of the Proposed Development, these do not have the potential to result in LSE, due to their undersea nature and the level of artificial structures and related vessels in the surrounding seascape. Relevant supporting evidence will be provided in the form of a position paper or note to the Seascape Landscape & Heritage Impact Technical Advisory Group as part of the Evidence Plan Process during Q4 2023.

15.7.3 LSE and next steps

Supporting studies

15.7.3.4 The SLVIA will be informed by desk-based studies and field survey work undertaken within the SLVIA Study Area. The seascape, landscape, and visual baseline will be informed by desk-based review of relevant seascape character and landscape assessments (listed in Table 15.1) and the ZTV, to identify receptors that may be affected by the offshore infrastructure and produce written descriptions of their key characteristics and value.

15.7.3.5 A preliminary desk-based assessment has been undertaken of seascape, landscape and visual receptors using ZTV analysis, to identify which seascape, landscape and visual receptors are likely to be affected by the offshore infrastructure, and therefore require assessment.

15.7.3.6 Within the EIA, interactions will be identified between the offshore infrastructure and seascape, landscape, and visual receptors, to predict the significance in EIA terms of arising effects and measures may be proposed to mitigate effects.

15.7.3.7 A baseline lighting analysis, aviation lighting ZTVs and selected night-time visualisations will be prepared to inform the assessment of night-time visual effects of the proposed lighting of the offshore infrastructure.

Assessment methodology

15.7.3.8 The EIA will assess the potential impacts on seascape, landscape and visual receptors identified in the Impacts Register (Annex 5.B).

15.7.3.9 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

15.7.3.10 In addition to this general approach, the assessment of impacts on seascape, landscape and visual receptors; will also follow the following guidance documents where they are specific to this topic:

- Landscape Institute with the Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment. Third edition (GLVIA3); and

- Landscape Institute (2021). Assessing landscape value outside national designations. Technical Guidance Note 02/ 21.

15.7.3.11 Seascape, landscape and visual receptors with LSE arising as a result of the Proposed Development will be considered within two separate chapters of the EIA. The SLVIA Chapter will consider the effects of the offshore infrastructure on seascape, landscape and visual amenity within the Isle of Man and similar transboundary effects on receptors within Scotland and England. The Landscape and Visual Impact Assessment (LVIA) Chapter will consider the effects of the onshore infrastructure on landscape elements, landscape and visual amenity, within the Isle of Man Scoping for the LVIA is described in Chapter 26, Landscape & Visual Impact Assessment.

15.7.3.12 The SLVIA will assess the effects of:

- Construction, operation and decommissioning of the offshore infrastructure, during the daytime, on seascape, landscape and visual receptors.
- Operation phase lighting during the night-time, on onshore visual receptors.
- Operation phase cumulative impacts of the offshore infrastructure and other existing, under construction or consented developments of a similar nature on seascape, landscape and visual receptors.

15.7.3.13 The objective of the assessment of the Proposed Development in the EIA will be to assess the likely significant effects on the seascape, landscape, and visual resource in EIA terms. The effects of the offshore infrastructure will be assessed to be either significant or not significant. The methodologies to undertake the SLVIA and LVIA will reflect guidance within GLVIA3 (Landscape Institute, 2013).

15.7.3.14 The SLVIA will be undertaken using the following steps:

- The features of the Proposed Development that may result in seascape, landscape and visual effects will be described. The overall scope of the assessment will be defined, including the SLVIA Study Area and the range of possible seascape, landscape, and visual effects;
- The seascape/ landscape baseline will be established using seascape/ landscape character assessment and the ZTV of the Proposed Development, to identify seascape and landscape receptors that may be affected and their key characteristics and value;
- The visual baseline will be established by identifying the ZTV, identifying the receptors who may be affected and identifying visual receptors and selecting representative viewpoints;
- An assessment of the susceptibility of seascape, landscape and visual receptors to specific change and the value attached to landscape receptors and views will be undertaken, combining these judgements to assess the sensitivity of the landscape and visual receptors to the Proposed Development;
- An assessment of the size/ scale of seascape/ landscape impact, the degree to which seascape/ landscape elements are altered and the extent to which the impacts change the key characteristics of the landscape will be undertaken, combining these judgements to assess the magnitude of change on each seascape/ landscape receptor;
- An assessment of the size/ scale of visual impact, the extent to which the change would affect views, whether this is unique or representative of a wider area, and

the position of the Proposed Development in relation to the principal orientation of the view and activity of the receptor will be undertaken. These judgements are combined to assess the magnitude of change on the visual receptor; and

- The assessments of sensitivity to change and magnitude of change will be combined to assess the significance of seascape, landscape, and visual effects.

15.7.3.15 In accordance with GLVIA3 (Landscape Institute, 2013), the SLVIA methodology require the application of professional judgement, but generally, the higher the sensitivity and the higher the magnitude of change the more likely that a significant effect will arise.

15.7.3.16 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on seascape, landscape and visual amenity receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

Transboundary Effects

15.7.3.17 Transboundary effects are defined as effects that extend into other jurisdictions. These may occur from the Proposed Development alone, or cumulatively with other plans or projects.

15.7.3.18 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on seascape, landscape and visual amenity outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA, in accordance with the methodology described above.

15.8 Questions to Consultees

- Question 15.1: Do you agree with the Study Area that has been identified for the seascape, landscape and visual amenity impact assessment?;
- Question 15.2: Do you agree that the baseline data sources identified, including project specific surveys, are sufficient to adequately characterise the baseline?;
- Question 15.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 15.4: Do you agree on the suitability of the proposed commitments to reduce or avoid LSE relevant to seascape, landscape and visual amenity?;
- Question 15.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 15.6: Do you agree with the proposed list of representative viewpoints for SLVIA identified in Table 15.3 and shown on Figure 15.2?; and
- Question 15.7: Do you agree with that the assessment of visible aviation lighting is required?

16 Offshore Archaeology & Cultural Heritage

16.1 Introduction

- 16.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to offshore archaeology and cultural heritage from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on offshore archaeology and cultural heritage receptors.
- 16.1.1.2 Offshore archaeology and cultural heritage assets can include wrecks of marine vessels, aircraft, their associated material and contents, deposits and artefacts or any other asset that provides evidence of previous human activity. These assets are considered an irreplaceable resource and impacts caused by the offshore Proposed Development may result in material damage or loss.
- 16.1.1.3 This Chapter has links with, and should therefore be read in conjunction with the following Chapters:
- Chapter 7, Marine Geology, Oceanography & Physical Processes, which covers changes to hydrodynamic and sedimentary regimes that may cause effects on offshore archaeology and cultural heritage receptors; and
 - Chapter 22, Onshore Archaeology & Cultural Heritage, which covers onshore archaeology and cultural heritage receptors above MHW.

16.2 Legislation, policy and guidance

- 16.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 16.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 16.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to offshore archaeology and cultural heritage. Where there is no, or limited, Manx

legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

- 16.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 16.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.
- 16.2.1.9 The eastern extent of the Offshore Array is also the boundary between Isle of Man and English offshore waters. Where assets, or their mitigation, extend into English offshore waters, English legislation will also be applicable to the assessment.
- 16.2.1.10 The below legislation, policy and guidance provides a context for focusing approaches and consultation requirements. These legal frameworks provide protection for marine historic assets of historical, archaeological or artistic value, as well as allowing military wrecks and aircraft remains to be protected. Ownership of any wreck remains is determined in accordance with the Wreck and Salvage (Ships and Aircraft) Act 1979 as administered by the Isle of Man's Receiver of Wreck within Isle of Man waters and the Merchant Shipping Act 1995 as administered by the UK's Receiver of Wreck within UK waters.

16.2.2 Legislation

National legislation

- Wreck and Salvage (Ships and Aircraft) Act 1979;
- Manx Museum and National Trust Act 1959-1986;
- Harbours Act 2010; and
- Treasure Act 2017.

International legislation and agreements

- Marine and Coastal Access Act 2009;
- Protection of Wrecks Act 1973, Section one and two;
- Ancient Monuments and Archaeological Areas Act 1979 (as amended);
- Protection of Military Remains Act 1986;
- Merchant Shipping Act 1995;
- National Heritage Act 2002; and
- The UK including the Isle of Man ratified the Convention for the Protection of the Archaeological Heritage of Europe (revised), known as the Valletta Convention, in 2000, putting it into force the following year (Council of Europe, 1992).

16.2.3 Policy

National policy

- The Isle of Man Strategic Plan 2016;
- Policy and Guidance Notes for the Conservation of the Historic Environment of the Isle of Man, Planning Policy Statement 1/01 (Department of Local Government and the Environment, date unknown); and

- The Draft Area Plan for the East (The Cabinet Office, 2018).

16.2.4 Guidance

National guidance

- Marine and Coastal Historic Environment: Chapter 5.1 of the Manx Marine Environmental Assessment for the Historic Environment (Manx National Heritage, 2018).

International guidance

- Protocol for Archaeological Discoveries: Offshore Renewables Projects (The Crown Estate, 2014);

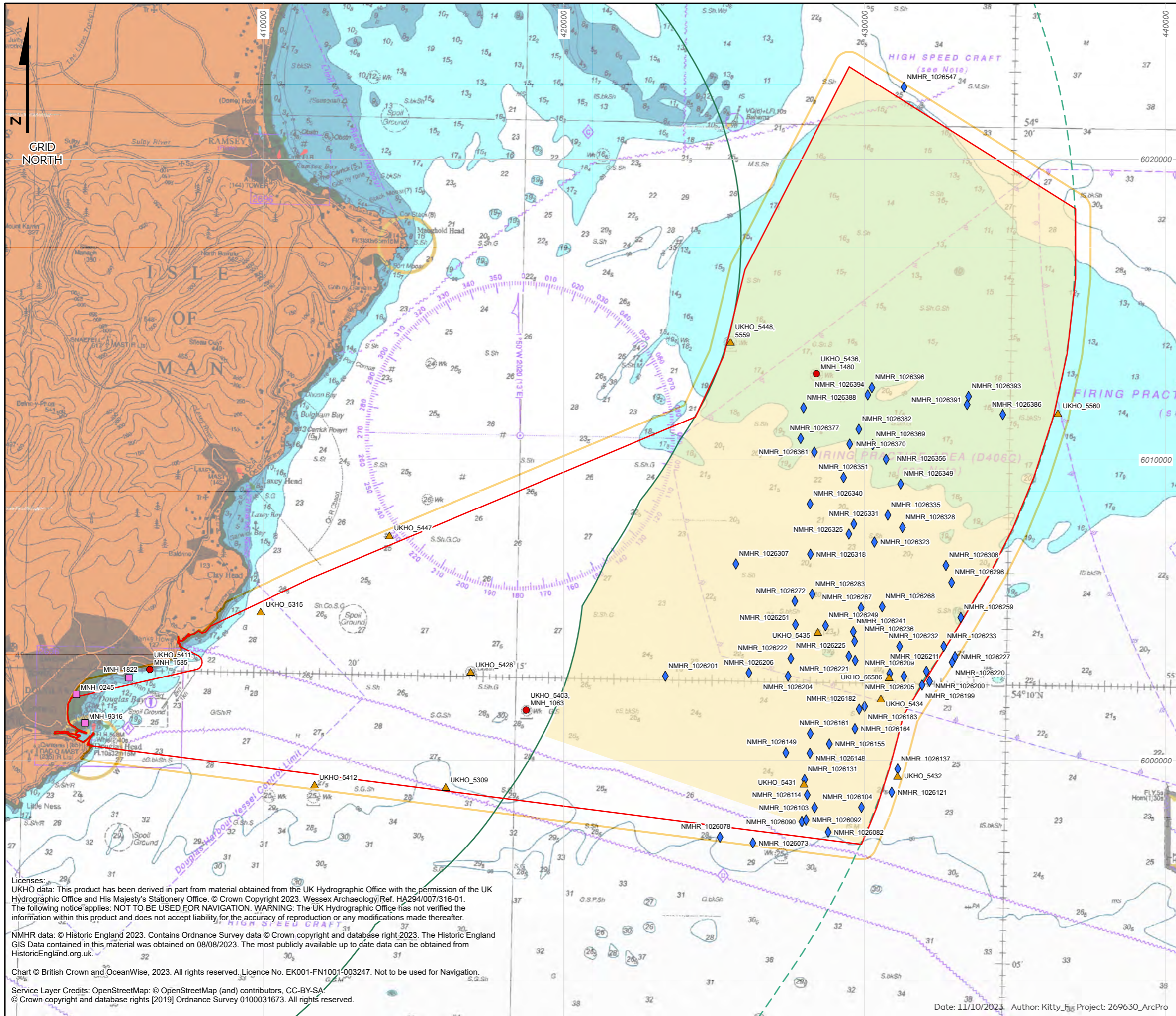
Standard and Guidance for Historic Environment Desk-bases Assessment (Chartered Institute for Archaeologists' (CIfA), 2020);

- Military Aircraft Crash Sites: Guidance on their significance and future management (English Heritage (now Historic England), 2002);
- The Code of Practice for Seabed Development (Joint Nautical Archaeology Policy Committee, 2006);
- Historic Environment Guidance for the Offshore Renewable Energy Sector (Wessex Archaeology, 2007);
- Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (English Heritage (now Historic England), 2008);
- Guidance for Assessment of Cumulative Impacts on the Historic Environment from Offshore Renewable Energy (Oxford Archaeology and George Lambrick Archaeology and Heritage, 2008);
- Our Seas – A shared resource: High level marine objectives (Department for Environment, Food and Rural Affairs, 2009);
- Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition) (English Heritage (now Historic England), 2011);
- Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector (Gribble and Leather, 2011);
- Assessing Boats and Ships 1860-1913, 1914-1938 and 1939-1950. Archaeological Desk-Based Assessments in 3 volumes (Wessex Archaeology, 2011);
- Ships and Boats: Prehistory to Present: Designation Selection Guide (English Heritage (now Historic England), 2012);
- Marine Geophysics Data Acquisition, Processing and Interpretation Guidance Notes (Plets *et al.*, 2013);
- Protection and Management of Historic Military Wrecks Outside UK Territorial seas (Department of Culture, Media and Sport and the Ministry of Defence, 2014);
- Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record (Historic England, 2015);

- The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning 3 (Historic England 2017);
- Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects (The Crown Estate, 2021); and
- Curating the Palaeolithic (Historic England, 2023).

16.3 Study Area

- 16.3.1.4 The offshore archaeology and cultural heritage Study Area is defined as a 500 m buffer around the extent of the Offshore Array and Offshore Electrical Connection Search Area. At the landfall, the Study Area extends to the MHW mark. The Study Area is shown on Figure 16.1.
- 16.3.1.5 The Offshore Array is located between the Isle of Man’s six nautical mile (nm) limit and 12 nm Territorial Seas, using the boundary of each limit as the east and west edges of the Offshore Array area. The eastern boundary of the Study Area therefore extends 500 m into English offshore waters.
- 16.3.1.6 The Study Area enables marine archaeological seabed assets that are located close to the boundary of the Study Area to be included in the assessment, as the features themselves or their potential mitigation measures may extend into the offshore element of the Proposed Development and could potentially be impacted.



Moor Vannin
Figure 16.1: Offshore Archaeology and Cultural Heritage

- Offshore Electrical Connection Search Area
- Offshore archaeology and cultural heritage study area
- Offshore array
- Isle of Man Historic Environment Record
- ▲ United Kingdom Hydrographic Office assets
- United Kingdom Hydrographic Office and Isle of Man Historic Environment Record
- ◆ National Marine Heritage Record assets
- 6 nm Limit
- Territorial Sea Limit



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:125,000

0 1 2 4 Kilometres

0 0.47 0.95 1.9 Nautical Miles

REV	REMARK	DATE
1	First issue	11/10/2023

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16.4 Baseline

16.4.1 Overview of baseline

16.4.1.4 The primary resources used within this Chapter are records relating to wreck sites and obstructions maintained by the United Kingdom Hydrographic Office (UKHO), the Isle of Man Historic Environment Record (MHER) and Historic England's National Marine Heritage Record (NMHR). A summary of this data is presented below and its distribution illustrated on Figure 16.1.

Protected sites

16.4.1.5 There are currently no known maritime or aviation sites within the Study Area that are subject to statutory protection from the legislation presented in section 16.2.

Palaeogeography

16.4.1.6 There are no records relating to prehistoric material within the Study Area.

16.4.1.7 Submerged landscapes are areas where human beings and early hominids previously lived; on terrain that was at that time dry land, or where they exploited marine resources on the coast, which is now submerged by Holocene sea-level change and geomorphological development.

16.4.1.8 There is potential for the presence of as yet undiscovered *in situ* palaeolandscape deposits (for example peats, estuarine and low-energy coastal sediments of archaeological interest) palaeochannels of river systems, prehistoric sites and finds located within the inundated palaeogeography. Any early prehistoric discoveries will be regarded as of national importance, above or below the seabed. Such material may be discovered from within vibrocores or boreholes recovered during pre-construction geotechnical surveys and following geoarchaeological assessment.

Maritime and aviation archaeology

Maritime archaeology

16.4.1.9 Maritime archaeological sites comprise two broad categories; the remains of vessels that have been lost as a result of stranding, foundering, collision, enemy action and other causes (for instance shipwrecks), and sites that consist of vessel-related material (for instance material that would be considered 'wreck' in terms of Wreck and Salvage (Ships and Aircraft) Act 1979).

16.4.1.10 There is potential for discoveries of maritime craft from the Mesolithic to the modern period. Post-medieval and modern wrecks, as they were generally made of more substantial material, are more likely to have been discovered through surveys undertaken by the UKHO and others, and thus recorded in the archaeological record. However, there is still potential for the discovery of previously unrecorded wreck sites, particularly of wooden wrecks, broken up wrecks or partially buried wrecks that are more difficult to detect through geophysical survey or have not been recorded as they do not represent a hazard to navigation.

Aviation archaeology

16.4.1.11 Marine aviation archaeology receptors comprise the remains or associated remains of military and civilian aircraft that have been lost at sea (Wessex Archaeology, 2008). Evidence is divided into three primary time periods based on major technological advances in aircraft design: pre-1939; 1939-1945; and post-1945.

16.4.1.12 There are no records relating to known aircraft crash sites within the UKHO or NMHR records, however, it is possible that any of the obstructions may relate to aircraft. Higher potential exists for 20th century aircraft, particularly in relation to the Second World War (Wessex Archaeology, 2008). Air/ Sea Rescue Services mapping indicates

that rescues took place within the Study Area and its vicinity, indicating the potential for associated aircraft material to exist (Air Ministry, 1952; Wessex Archaeology, 2008). Incomplete, disbursed and/ or buried aircraft crash sites may be harder to identify through archaeological assessments of geophysical survey, due to the nature of the material used to construct the fuselage of aircraft being aluminium or aluminium alloy which will not be detected by a magnetometer. However, experience indicates that material from the site, such as engines made of iron or ordnance, may be recorded as small obstructions or anomalies.

Known seabed assets

16.4.1.13 There are 85 records within the Study Area obtained from the UKHO, MHER and NMHR databases that could relate to maritime or aviation sites and/ or associated material. Of these, 64 are located within the extent of the Offshore Array area.

16.4.1.14 The 83 records are illustrated on Figure 16.1, and comprise:

- Seven named wrecks, including:
 - Four 'live' wrecks recorded by the UKHO as having existing identified wreckage on or under the seabed;
 - One wreck recorded by MHER that is visible during lowest autumn and spring tides;
 - One 'dead' wreck considered by the UKHO not to exist as material has not been detected during the most recent surveys; and
 - One 'lifted' wreck that was recovered from the seabed.
- Seventy-six obstructions, including:
 - Six 'live' obstructions recorded by the UKHO as having existing material on or under the seabed;
 - Three 'dead' obstructions considered by the UKHO not to exist as material has not been detected during the most recent surveys; and
 - Sixty-seven unidentified obstructions recorded by the NMHR from the Kingfisher Charts Obstruction Guide Book General.

16.4.1.15 It should be noted that any of the unidentified sites or obstructions could relate to either shipwreck or aircraft sites and that material could still exist on or under the seabed of the sites described as 'dead' or 'lifted'.

16.4.1.16 All seven of the recorded wrecks relate to named vessels, potentially allowing further research to be undertaken into their background, use and circumstances of loss.

16.4.1.17 Three of the known and named wrecks refer to modern vessels that have been lost between 1950 and 1966. Although these wreck sites do not have archaeological value, they still retain social and cultural value, and would also be considered navigational hazards for the Proposed Development. Despite their lack of archaeological value, these records will be retained in the gazetteer of seabed assets.

Potential seabed assets

16.4.1.18 Within the MHER dataset there are 386 records that relate to maritime Recorded Losses located inside the Study Area. These Recorded Losses relate to ships that are known or believed to have wrecked offshore, but for which the exact locations are

not known. The positional data of these records is unreliable and serves only to provide an indication of the types of vessels that passed through the area, their dates of loss and reasons for the wrecking incidents within the region, where such information is recorded. Whilst the remains of these vessels are expected to exist somewhere on the seafloor, their location is unknown and are not presented on a figure. As such, they signify the extensive potential maritime resource for the area.

Intertidal assets

16.4.1.19 Intertidal heritage assets comprise sites and material located in the area between the MHW and MLW marks. There are two records within the Study Area obtained from MHER database that relate to intertidal records (Figure 16.1), comprising:

- One standing monument relating to the Tower of Refuge built on Conister Rock.
- One find spot relating to a 2nd century Roman coin.

16.4.1.20 Due to the Study Area extending to the harbour at Douglas, the capital of the Isle of Man, that has a long maritime past, along with the adjacent settlement of Onchan to the north of Douglas and proximate to Groundle Bay, there is an increased potential for additional marine and cultural heritage assets to be discovered during works associated with the Proposed Development.

16.4.2 Data sources

16.4.2.4 The datasets used in this assessment have been presented in Universal Transverse Mercator (UTM) Zone 30 North projected from a European Terrestrial Reference System (ETRS89) datum.

16.4.2.5 The baseline overview presented above is a collation of available datasets and not a detailed baseline characterisation. The data sources that will be used to inform the more detailed offshore archaeology and cultural heritage baseline are presented in Table 16.1. These identified data sources will be taken forwards and used to inform the subsequent Evidence Plan Process.

Table 16.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
United Kingdom Hydrographic Office https://www.admiralty.co.uk/access-data/marine-data	Dataset comprising wrecks and obstructions collected and maintained for navigational purposes.	Records exist within the Offshore Array area and the Offshore Electrical Connection Search Area (data obtained 26 July 2023).
Isle of Man Historic Environment Record maintained by Manx National Heritage https://isleofmanher.im/	Dataset comprising historic places, archaeological sites, landscapes, shipwrecks and historic buildings.	Records exist within the Offshore Array area and the Offshore Electrical Connection Search Area (data downloaded from the Isle of Man HER website in September 2023)
National Heritage List for England (NHLE) maintained by Historic England.	Dataset comprising designated heritage assets including sites	No records exist within the Offshore Array and the

Source	Summary	Coverage of the Study Area
	protected under the UK's Protection of Military Remains Act 1986 and the Protection of Wrecks Act 1973.	Offshore Electrical Connection Search Area.
National Marine Heritage Record maintained by Historic England https://historicengland.org.uk/research/support-and-collaboration/heritage-information-access-simplified/national-marine-heritage-record/	Comprises data for terrestrial and marine archaeological sites, find spots and archaeological events.	Records exist from the 6 nm limits to the eastern extent of the Study Area (data obtained 08 August 2023).
The Receiver of Wreck for the Isle of Man https://www.gov.im/about-the-government/departments/infrastructure/harbours-information/information-and-legislation/diving-and-wrecks/	Dataset comprising reports of 'wreck' found on or near the coasts of the island or the shores of any tidal water.	As of 22 August 2023, data has not yet been supplied from this data source, however it is envisaged to extend across the Study Area. Data supplied at a later date will be integrated into relevant reporting as required.
Adrian Corkill's shipwreck database obtained directly from Mr Corkill or via his book (Corkill, 2001).	A comprehensive database for shipwrecks off the Isle of Man.	As of 22 August 2023, data has not yet been compiled from this data source, however it is envisaged to extend across the Study Area. Data supplied at a later date will be integrated into relevant reporting as required.
Rough Landing or Fatal Flight: A History of Aircraft Accidents On, Over, and Around the Isle of Man (Poole, 1999)	Details of aircraft crash sites around the Isle of Man.	As of 22 August 2023, data has not yet been compiled from this data source, however it is envisaged to extend across the Study Area. Data supplied at a later date will be integrated into relevant reporting as required.
Aircraft Crash Sites at Sea: A Scoping Study. Archaeological Desk-based Assessment (Wessex Archaeology, 2008)	A compilation of datasets relating to aircraft crash sites located around the UK.	Data extends to the Isle of Man, but no records are located inside the Study Area.
The Second World War 1939-1945 Royal Air Force	Air/ Sea Rescue Services maps indicating potential	Mapping indicates air/ sea rescues occurred within

Source	Summary	Coverage of the Study Area
Air/Sea Rescue (Air Ministry (A.H.B), 1952)	for aircraft remains following rescues.	the Study Area during the Second World War.
Historic Seascape Characterisation (HSC): Consolidating the National HSC Database (Land Use Consultants, 2017)	Assessment of the seascape character around England. Consolidation of eight existing HSC implementation projects (undertaken between 2008 and 2015) into a single national database.	As an English dataset, this source is only relevant to the 500 m buffer that is present within English Territorial Seas. There is not an equivalent assessment for the Isle of Man, however it is possible that the data can be extrapolated into the Offshore Array area.
Geophysical and geotechnical marine survey data	Aiming to characterise marine heritage assets that may not already be recorded in archive datasets.	Extent of surveys are to be confirmed.
GeolIndex (offshore) maintained by the BGS https://www.bgs.ac.uk/map-viewers/geoindex-offshore/	Geological information and survey data for the offshore environment.	Geological data exists within the Offshore Array and the Offshore Electrical Connection Search Area.
Historic England's intertidal and coastal peat database https://historicengland.org.uk/research/current/heritage-science/intertidal-peat-database/	A database of intertidal and submerged peat deposits around the English and Isle of Man coastlines.	No samples are present within the Study Area.
Admiralty chart 1320	Marine charts issued by the UKHO that provide details regarding depths (chart datum), navigational seabed hazards including wreck sites and coastlines.	The chart covers the entire Study Area.

16.4.3 Summary of key receptors

16.4.3.4 Marine archaeological and cultural heritage assets that are either known and their position is currently located within the Study Area or could be discovered within the Study Area as a result of works associated with the offshore Proposed Development, and which would be relevant to the offshore Proposed Development can be characterised as comprising four fundamental themes:

- Palaeogeography (for example, seabed and sub-seabed palaeochannels and other geomorphological features that may contain prehistoric deposits, ecofacts, and prehistoric artefacts such as stone tools) including their setting;

- Seabed assets, including maritime sites (such as shipwrecks and/ or associated material including cargo, obstructions and fishermen's fasteners) and aviation sites (aircraft crash sites and/or associated debris) including their setting;
- Intertidal heritage receptors relating to marine and maritime activity for example fish traps, piers, sea defences located within the intertidal zone, between the MHW and MLW marks; and
- The historic seascape character in and around the Study Area.

16.4.3.5 The types of archaeology listed above relate to the known and currently unknown marine resource, which will be discussed further in this section.

16.4.4 Further data collection to be undertaken

16.4.4.4 Following submission of the Scoping Report, the baseline for marine archaeology will be further enhanced by obtaining additional data from sources indicated in Table 16.1 along with further documentary sources and grey literature available through the Archaeological Data Service and other websites. This information will be used to compile a desk-based assessment undertaken as part of the impact assessment process. The desk-based review will be completed in accordance with the relevant sections of the ClfA Standard and Guidance for Historic Environment Desk-based Assessment (2020). The importance (or value) of marine historic environment assets along with the significance of their setting will also be evaluated to inform the assessment. The level of importance assigned will depend on a number of factors, including intrinsic, contextual and associative characteristics.

16.4.4.5 Geophysical and geotechnical survey data acquisition for pre-consent planning purposes will be archaeologically assessed for indications of seabed features of potential and the results used to supplement the desk-based research gathered to inform the EIA process. These datasets will aim to characterise unidentified seabed anomalies and marine heritage assets that have the potential to be present due to an unknown location of loss, since there could be assets of moderate and high heritage value present with the Study Area. A project-specific Written Scheme of Investigation (WSI) will be prepared that will present the final scope and specific methodologies for any further planned geophysical and geotechnical surveys and investigations, all of which will be subject to archaeological review.

16.4.4.6 The palaeogeography baseline will be enhanced by the geoarchaeological review of geotechnical and geophysical datasets obtained for the Proposed Development. This information will be further enhanced by a review of geological mapping of seabed sediments, solid geology and bathymetry from published BGS sources.

16.4.4.7 An intertidal walkover survey will be undertaken at the proposed landfall location to ground truth previously recorded heritage assets and to identify any new assets that may be of relevance to the assessment. The results of this will inform the baseline within the desk-based assessment.

16.4.4.8 The results of the desk-based assessment will be used to prepare a robust chapter for the ES, clearly presenting the information regarding the known and potential offshore archaeology and cultural heritage receptors, with a discussion as to their archaeological value and sensitivity to impact.

16.4.5 Future baseline

16.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime

of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

16.5 Identification of impacts and effects

16.5.1 Key parameters for assessment

16.5.1.4 The offshore archaeology and cultural heritage scoping is based on the construction, operation and maintenance and decommissioning of the following Proposed Development infrastructure (for which further information can be found in Chapter 3, Project Description):

- The construction of up to 100 wind turbine generators (WTGs) with one of various fixed foundation options with associated seabed preparation and scour protection and preparation;
- The construction of up to five Offshore Substations (OSSs) with piled jacket foundations with associated seabed preparation and scour protection;
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection and including seabed preparation (boulder clearance and sandwave clearance) and installation (trenching, dredging, jetting, ploughing or vertical injection);
- Regular operation and maintenance activities throughout the operational life of the Proposed Development; and
- Decommissioning of all project infrastructure at the end of its operational life
- Use of specialist associated work vessels, such as jack-up barges, cable-laying vessels, including mooring and anchoring systems;
- Installation of intertidal cables at the landfall using open cut trenching/ trenchless or J-tubes.

16.5.1.5 Potential impacts to seabed, sub-seabed and intertidal marine heritage assets include both direct and indirect impacts.

16.5.1.6 Direct impacts can include direct damage to structures, features, deposits and artefacts, and the disturbance of relationships between these elements and the wider surroundings. The setting of known and named wreck sites may also be impacted and in turn this could potentially affect the significance of such receptors.

16.5.1.7 The indirect interactions upon the known and potential marine archaeological receptors occur as a result of changes to hydrodynamic patterns and sediment transport regimes, where these changes have occurred as a consequence of activities and structures associated with the Proposed Development activities. Scour has a negative or adverse impact on marine archaeological receptors whereby it can expose material which leads to increased rates of deterioration through biological, chemical and physical processes. Alternatively, the redeposition of sediments following settling of sediment plumes can be beneficial to the preservation of marine archaeological receptors as greater sediment cover increases the potential for anaerobic environment, which inhibits a range of biological, chemical and physical degradation processes.

16.5.2 Commitments

- 16.5.2.4 Potential impacts on offshore archaeology and cultural heritage receptors have been identified, which may occur during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.
- 16.5.2.5 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to offshore archaeology and cultural heritage are described in Table 16.2 below.
- 16.5.2.6 For the purposes of offshore archaeology and cultural heritage, relevant commitments will be presented and implemented through the preparation and development of a Written Scheme of Investigation (WSI), a draft of which will be provided for consultation via the Evidence Plan Process. These commitments (both embedded and applied) will be incorporated within the design envelope to reduce and minimize the potential effects of the Proposed Development on offshore archaeology and cultural heritage receptors. The detail within the WSI is intended to provide statutory (and non-statutory) advisors with the confidence that due consideration and protection of archaeological assets has been given throughout the EIA process. It is important to note that it is the implementation of the procedures detailed in the WSI, rather than its production, that discharges any associated licence conditions.
- 16.5.2.7 The WSI will set out the aims of the offshore investigation, a summary of the known and potential offshore archaeology and cultural heritage baseline, and the methodologies and standards that will be employed by the Applicant (and their appointed archaeological contractor) to implement the agreed strategy for commitments. In this regard, implementing the details and contents of the WSI will prevent or reduce the potential for significant effect on the known and potential offshore archaeology and cultural heritage resource.
- 16.5.2.8 The offshore archaeological commitments will be set out for agreement in principle with the archaeological curator(s). In format and content, the WSI will conform to current best practice and to the guidance outlined in Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects (The Crown Estate 2021).

Table 16.2: Relevant commitments to offshore archaeology and cultural heritage.

ID	Measure proposed	How this measure will be secured	Rationale
Co2	Development of, and adherence to, an Asset Installation & Protection Plan (AIPP) detailing the quantities and installation methods for subsea infrastructure, informed by the CBRA.	MIC condition.	To inform judgements on required cable burial depth, ensuring cable burial where possible while limiting the potential for cable exposure and minimising the amount of seabed disturbance required.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities

ID	Measure proposed	How this measure will be secured	Rationale
			taking place at the end of the operational life of the project.
Co38	Development of, and adherence to, an offshore Written Scheme of Archaeological Investigation (WSI) including the establishment of a Protocol for Archaeological Discoveries (PAD).	MIC condition.	<p>To provide details and methodologies for mitigation measures necessary to avoid significant environmental effects in relation to known and potential offshore archaeology and cultural heritage, especially for unavoidable impacts to potential archaeological receptors.</p> <p>A PAD reduces the impact on the marine historic environment by enabling Proposed Development staff to report any unexpected sites and finds in a manner that is convenient and effective, receiving prompt archaeological advice and undertaking recording and/ or conserving any objects that have been disturbed. Discovery of significant archaeological material reported through the Protocol may be subject to the implementation of a TEZ (Temporary Exclusion Zone) preventing further impact to the seabed within its extent. Additional investigation of such features may also be required to understand their identity, extent or archaeological value.</p>
Co39	Establishment and avoidance of offshore Archaeological Exclusion Zones (AEZs).	MIC condition.	To understand, as far as possible, the known and recorded offshore archaeological resource to enable avoidance of all such sites (even those of low archaeological interest/value).
Co40	Avoidance, where possible, of identified archaeology and cultural heritage assets of lower value not covered by AEZs. Where avoidance or micro-siting is not possible, further assessment will be undertaken to confirm the nature of the seabed anomaly, following consultation with relevant stakeholders.	MIC condition.	AEZs may be amended (enlarged, reduced, moved or removed) because of further data assessment of field evaluation and must be undertaken in consultation with the Archaeological Curator.
Co41	Reporting of archaeological finds to relevant stakeholders.	MIC condition.	To ensure the results of archaeological surveys and assessments are archived and made available to the public and other researchers.

16.5.3 Approach to assessment of likely significant effects

- 16.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on offshore archaeology and cultural heritage at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.
- 16.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.
- 16.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 16.2 above and in the Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage;
 - The evidence for effects on offshore archaeology and cultural heritage based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified offshore archaeology and cultural heritage lead.

16.6 Proposed approach to the EIA

- 16.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on offshore archaeology and cultural heritage associated with the Proposed Development that
- 16.6.1.5 In line with the Scoping Strategy (Annex 5.C):
- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 16.7.2; and
 - **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 16.7.3.
- 16.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 16.6.1.7 For offshore archaeology and cultural heritage, the assessment of impacts will also follow specific guidance. This is further detailed within section 16.7.3 below.
- 16.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the

change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

16.7 Post-scoping

16.7.1 Overview

16.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For offshore archaeology and cultural heritage, the scoping study has identified:

- Four impacts which have the potential to result in No LSE; and
- Three impacts which have the potential to result in LSE.

16.7.2 No LSE and next steps

16.7.2.4 Following the integration of all geophysical and geotechnical survey results and with the implementation of AEZs and avoidance measures via the WSI, direct damage to known and recorded archaeological receptors (maritime or aviation) and/or anomalies of likely or possible anthropogenic origin on or under the seabed will result in No LSE.

16.7.2.5 Following the archaeological assessment of all marine geotechnical and geophysical survey data undertaken within the Study Area will allow a better understanding of palaeogeographic features and the potential for prehistoric remains. These features cannot be avoided and therefore impact can be offset through further investigation, assessment and the creation of an appropriate record, and as such will result in No LSE at this stage.

16.7.2.6 With the implementation of a Protocol for Archaeological Discoveries (set out within a WSI), direct damage to potential, currently unrecorded archaeological receptors will be minimised resulting in No LSE at this stage.

16.7.2.7 As described in section 16.5.2 above, a draft WSI will be provided to consultees to support this conclusion via the Evidence Plan Process. Initially, this is anticipated to be provided in Q4 2023/Q1 2024, however will be updated following the acquisition and geoarchaeological analysis of site-specific geophysical data.

16.7.2.8 The remaining impacts identified for offshore archaeology and cultural heritage in the Impacts Register (Annex 5.B) will therefore be carried forward for assessment in the EIA.

16.7.3 LSE and next steps

Supporting studies

16.7.3.4 As stated in section 16.1, the results of Chapter 7, Marine Geology, Oceanography & Physical Processes and Chapter 22, Onshore Archaeology & Cultural Heritage will be used to further inform the baseline of the offshore archaeology and cultural heritage assessment.

16.7.3.5 Marine processes provide further details regarding sediment movement, and potential for scour and erosion, which is important for understanding the effect of indirect impacts on underwater cultural heritage. Furthermore, due to the overlap with the onshore assessment in the intertidal zone, the results of the assessment and utilisation of potentially different sources, including historic maps, may provide further context for the offshore assessment.

16.7.3.6 The data sources that are presented in Table 16.1 will be further interrogated and analysed in order to inform a detailed baseline characterisation.

Assessment Methodology

- 16.7.3.7 The EIA will assess the potential impacts on offshore archaeology and cultural heritage identified in the Impacts Register (Annex 5.B).
- 16.7.3.8 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 16.7.3.9 In addition to this general approach, the assessment of impacts on offshore archaeology and cultural heritage will also follow the following guidance documents listed in section 16.2.
- 16.7.3.10 For known and potential offshore archaeology and cultural heritage receptors, impact magnitude will be determined by the following factors:
- Extent – the area over which an effect occurs;
 - Duration – the time for which the effect occurs;
 - Frequency – how often the effect occurs; and
 - Severity – the degree of change relative to existing environmental conditions.
- 16.7.3.11 The assessment of magnitude will be led by professional judgment since cultural heritage impacts are rarely quantifiable. Table 5.1 of Chapter 5, EIA Methodology, shows the scale that will be used to determine each receptor's magnitude, ranging from "Major" to "No change" along with an adverse or beneficial effect evaluation.
- 16.7.3.12 The sensitivity of offshore archaeology and cultural heritage receptors is a function of their capacity to accommodate change and reflects their ability to recover if affected. The sensitivity of each receptor will be determined by the following factors:
- Value – a measure of the receptor's importance, rarity or worth;
 - Adaptability – the degree to which a receptor can avoid or adapt to an effect;
 - Tolerance – the ability of a receptor to accommodate temporary or permanent change without significant negative impact; and
 - Recoverability – the temporal scale over and extent to which a receptor will recover following an effect.
- 16.7.3.13 Offshore archaeology and cultural heritage receptors are recognised as an irreplaceable resource and cannot typically adapt, tolerate or recover from physical impacts resulting in material damage or loss caused by development. Consequently, the sensitivity of each receptor is predominantly quantified only by their value. Where receptors are considered to be capable of adapting to, tolerating or recovering from indirect impacts, these factors were incorporated into an assessment of their sensitivity. The value of known archaeological assets are assessed on a site-by-site basis using professional judgement and experience, with reference to relevant criteria.
- 16.7.3.14 Based on English Heritage's Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008), significance of a historic asset is weighed by consideration of the potential for the asset to demonstrate the following value criteria:
- Evidential value – deriving from the potential of a place to yield evidence about past human activity;

- Historical value – deriving from the ways in which past people, events and aspects of life can be connected through a place to the present. It tends to be illustrative or associative;
- Aesthetic value – deriving from the ways in which people draw sensory and intellectual stimulation from a place; and
- Communal value – deriving from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical (particularly associative) and aesthetic values but tend to have additional and specific aspects.

16.7.3.15 It should be noted that, while designation indicates that a receptor has been identified as being of high value, non-designated archaeological assets are not necessarily of lesser value. Consequently, non-designated receptors that can be demonstrated to be of equivalent value to designated sites are considered to be of equivalent significance.

16.7.3.16 The nature of the marine archaeological resource is such that there is a high level of uncertainty concerning remains on the seabed. Often data regarding the nature and extent of sites are limited or out of date and, as such, the precautionary principle has been and will be applied to all aspects of the archaeological impact assessment.

16.7.3.17 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on offshore archaeology and cultural heritage receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

16.7.3.18 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on offshore archaeology and cultural heritage receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

16.8 Questions to Consultees

- Question 16.1: Do you agree with the Study Area that has been identified for offshore archaeology and cultural heritage?;
- Question 16.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 16.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 16.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to offshore archaeology and cultural heritage?; and
- Question 16.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

17 Military & Civil Aviation

17.1 Introduction

- 17.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to military and civil aviation from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on military and civil aviation receptors.
- 17.1.1.2 Wind Turbine Generators (WTGs) have the potential to cause a variety of adverse effects on military and civil aviation receptors. WTGs can impact radars used by civilian and military air traffic controllers because the characteristics of moving WTG blades are similar to those of aircraft, leading to spurious returns, or “clutter”, on radar displays. This can affect the safe provision of air traffic services or interfere with tracking of aircraft by the military. WTGs also have the potential to present a physical obstruction for aviation activities such as military low flying or helicopter Search and Rescue (SAR) operations.
- 17.1.1.3 This Chapter should therefore be read in conjunction with:
- 17.1.1.4 Chapter 14, Shipping & Navigation, which considers the potential for effects on SAR operations; and
- 17.1.1.5 Chapter 18, Other Marine Users & Activities, which considers the potential for effects on other activities such as oil and gas operations.

17.2 Legislation, policy and guidance

- 17.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
- 17.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 17.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to military and civil aviation. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

17.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

17.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

17.2.2 Legislation

National legislation

- Isle of Man Civil Aviation Administration (IOMCAA) (2019). Civil Aviation Act 1982. Civil Aviation Acts Order 2019;
- IOMCAA (2023). The Air Navigation (Isle of Man) Order 2015 (as amended); and
- IOMCAA (2022). Rules of the Air. CP15.

International legislation and agreements

- Civil Aviation Authority (CAA) (2023) Aeronautical Information Publication (AIP). Civil Aviation Publication (CAP) 032;
- CAA (2016). Air Navigation Order (ANO) 2016;
- CAA (2019). Air Traffic Services Safety Requirements. CAP 670;
- International Civil Aviation Organisation (ICAO) (2022). The Convention on International Civil Aviation: Aerodrome Design and Operations, Annex 14; and
- Ministry of Defence (MOD) (2023). UK Military AIP.

17.2.3 Policy

National policy

- IOMCAA (2016). Wind Turbines. Civil Aviation Administration Publications (CP)1.

International policy

- CAA (2016). CAA Policy and Guidelines on Wind Turbines. CAP 764.

17.2.4 Guidance

National guidance

- IOMCAA (2016). Wind Turbines. CP1.

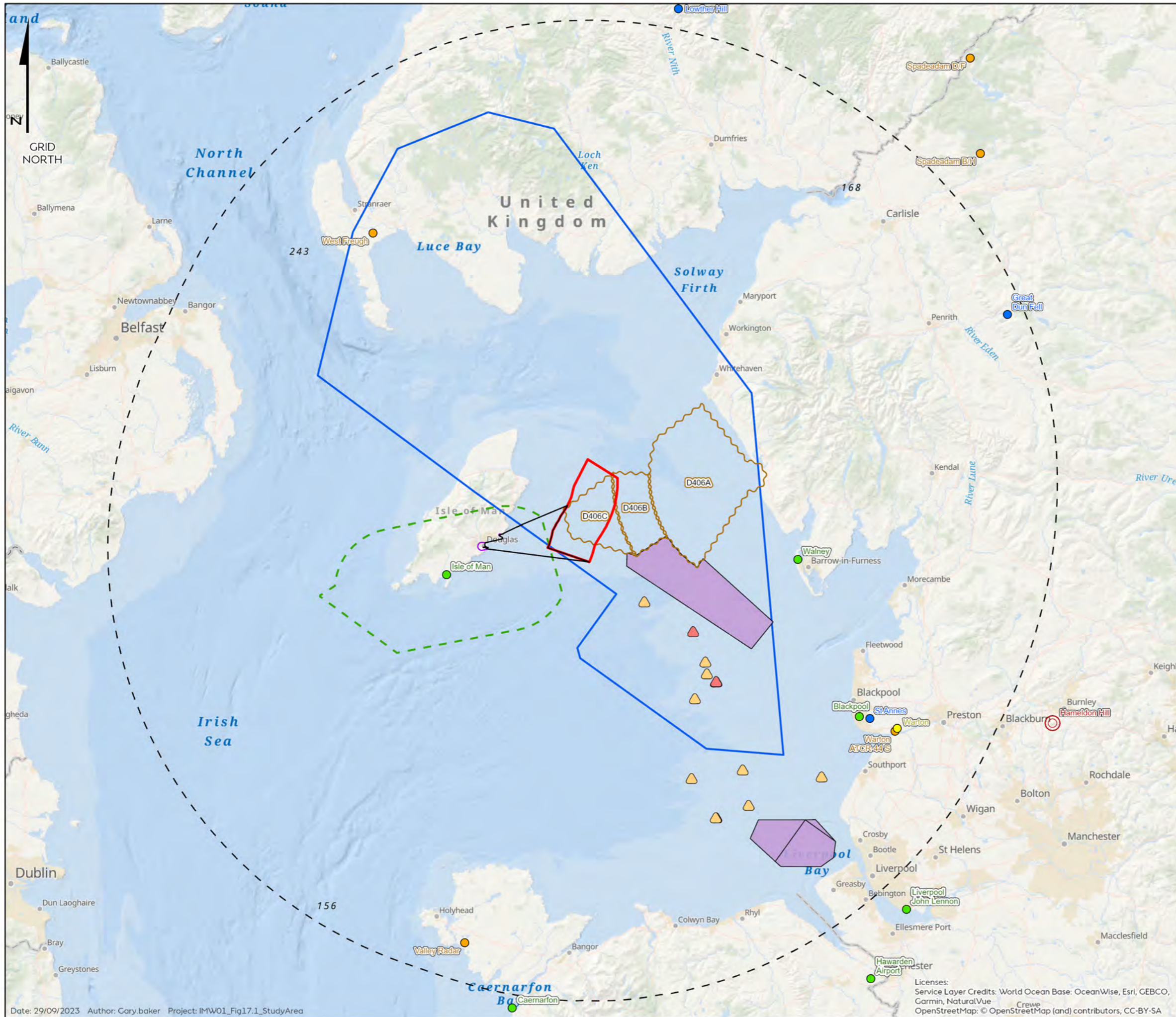
International guidance

- CAA (2020). Safeguarding of Aerodromes. CAP 738;
- CAA (2022). Licensing of Aerodromes, Eleventh Edition. CAP 168;
- CAA (2023). Standards for offshore helicopter landing areas. CAP 437;
- CAA (2021). UK Flight Information Services, Version 2.3. CAP 774;
- CAA (2016). CAA Policy and Guidelines on Wind Turbines. CAP 764;
- CAA (2021). Airspace Change. CAP 1616;

- MCA (2021). Safety of Navigation: Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety, and Emergency Response. Marine Guidance Note (MGN) 654 (M+F);
- MCA (2021). Offshore Renewable Energy Installations: Requirements, guidance and operational considerations for SAR and Emergency Response; and
- MOD (2020). MOD Obstruction Lighting Guidance.

17.3 Study Area

- 17.3.1.4 In considering the spatial coverage of the military and civil aviation Study Area, the overriding factor is the potential for WTCs within the Offshore Array to have an impact on civil and military radars, taking into account required radar operational ranges. In general, Primary Surveillance Radars (PSRs) installed on civil and military airfields have an operational range of 40 to 60 nautical miles (nm). All radar-equipped airfields within 60 nm of the Offshore Array are therefore included in the Study Area. En route radars operated by NATS (formerly National Air Traffic Services) (En Route) plc (NERL) and military Air Defence (AD) radars are required to provide coverage in excess of 60 nm and so all such radars with potential Radar Line of Sight (RLoS) of WTCs in the Offshore Array have also been considered.
- 17.3.1.5 The radars included within the Study Area which are outside of the 60 nm range which are likely to have visibility of the WTCs have been selected based on expert opinion. RLoS analysis is used to indicate if the radars will have a probability of detection. The maximum tip height of WTCs within the Offshore Array is 389 m above LAT (equal to 385 m AMSL). This conversion is important to note since within the aviation industry, all Airspace, Instrument Flight Procedures (IFPs), and AIP charts use AMSL.
- 17.3.1.6 The military and civil aviation Study Area is defined by the Proposed Development footprint, a 60 nm buffer around the Offshore Array for all air radar-equipped airfields, and a selection of NERL, military Air Traffic Control (ATC) and AD radars likely to have visibility of the WTCs. This includes the airspace between the Offshore Array, Isle of Man and the UK mainland, extending from Lowther Hill in the north, to Hawarden Airport to the south-east of the Offshore Array. Airports and Radars under consideration for the Scoping Report are shown in Figure 17.1. No AD radars have been identified as having the potential to be affected.



Moor Vannin

Figure 17.1

Military and Civil Aviation Study Area

- Military and Civil Aviation Study Area

Scoping Boundary

- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array

Active Oil & Gas Platforms

- Active Oil & Gas Platform
- Active Oil & Gas Platform (with Helideck)
- Civil Aerodromes
- Military ATC Radar
- Military Airfields
- NERL ATC Radars
- Weather Radars

Transponder Mandatory Zone

Temporary Reserved Area (TRA) 004

IoM Airport CTR

MOD Danger Areas



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:950,000

0 5 10 20 Kilometers

0 3 6 12 Nautical Miles

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17.4 Baseline

17.4.1.4 The following are categories used to breakdown the baseline overview and identify aviation receptors within the Study Area:

- Civil Aerodromes;
- MOD;
- NERL Facilities;
- Meteorological Radio Facilities; and
- Other Aviation Activities.

17.4.2 Overview of baseline

Civil Aviation

17.4.2.4 CAP 764 Policy and Guidelines on Wind Turbines (CAA, 2016) states the distances from various types of aerodromes where consultation should take place. These distances include:

- Aerodromes with a surveillance radar – 30 km;
- Non-radar equipped licensed aerodromes with a runway of more than 1,100 m – 17 km;
- Licensed aerodrome where the WTGs will lie within airspace coincidental with any published IFP;
- Unlicensed aerodromes with runways of more than 800 m – 4 km;
- Unlicensed aerodromes with runways of less than 800 m – 3 km;
- Gliding sites – 10 km; and
- Other aviation activity such as parachute sites and microlight sites within 3 km.

17.4.2.5 CAP 764 goes on to state that these distances are for guidance purposes only and do not represent ranges beyond which all WTG developments will be approved or within which they will always be objected to. For example, aerodromes may utilise their radars at ranges considerably in excess of 30 km.

17.4.2.6 As well as examining the technical impact of WTGs on ATC facilities, it is also necessary to consider the physical safeguarding of ATC operation using the criteria laid down in CAP 168 Licensing of Aerodromes (CAA, 2019) to determine whether the Proposed Development will breach obstacle clearance criteria.

17.4.2.7 The Offshore Array has the potential to impact nearby airspace. This includes the Isle of Man Control Area (CTR) as shown in Figure 17.1. Furthermore, WTGs within the Offshore Array have the potential to impact nearby airports with published IFPs by potentially breaching their associated Minimum Sector Altitudes (MSAs). Both the Isle of Man and Walney Airport have MSAs within the vicinity of the Offshore Array.

17.4.2.8 The nearest PSR equipped civil airports are the Isle of Man, Hawarden and Liverpool Airport. Preliminary RLoS analysis indicates that the Isle of Man Airport will have visibility of WTGs with a maximum tip height of 389 m above LAT (385 m AMSL) within the Offshore Array.

Ministry of Defence

17.4.2.9 It is necessary to consider the aviation, AD and other activities of the MOD. This includes:

- MOD airfields, both radar and non-radar equipped;
- MOD AD radars; and
- MOD Practice and Exercise Areas (PEXAs) for both aviation and non-aviation activities.

17.4.2.10 The nearest military ATC radars are Spadeadam Berry Hill and Deadwater Fell, West Freugh, RAF Valley and Warton Airport. The nearest military AD radar to the Offshore Array is Brizlee Wood, located 187.6 km to the north-east of the Offshore Array. Preliminary RLoS indicates that Deadwater Fell, West Freugh, and Warton Airfield will have visibility of WTGs with a maximum tip height of 389 m above LAT (385 m AMSL) within the Offshore Array. Brizlee Wood will have no visibility of WTGs within the Offshore Array.

17.4.2.11 The Offshore Array lies within the Eskmeals Danger Areas D406C and D406B as shown in Figure 17.1. This airspace is active from sea-level. Activities within this area are associated with the weapons range at Eskmeals and include ordnance, munitions and explosives, and unmanned aircraft systems. These PEXAs are highly likely to be impacted by the Proposed Development.

NERL Facilities

17.4.2.12 It is necessary to consider the possible impacts of WTGs upon NERL radar systems – a network of primary and secondary radar facilities around the country. NERL operates a network of radar facilities which provide en route information for both civil and military aircraft. The closest UK NERL radars to the Offshore Array are Lowther Hill, Great Dun Fell, and St Annes. Preliminary RLoS analysis indicates that WTGs with a maximum tip height of 389 m above LAT (385 m AMSL) within the Offshore Array will be visible to Lowther Hill and St Annes, but not to Great Dun Fell.

Meteorological Radio Facilities

17.4.2.13 WTGs have the potential to adversely impact meteorological facilities, such as weather radars. The Meteorological (Met) Office must be consulted by developers for WTG proposals within a 20 km radius zone of any of their UK weather radar sites. The nearest Met Office radar is Hameldon Hill, located 132.2 km to the east-south-east of the Offshore Array. Although this facility is located outside of the 20 km impact radius, preliminary RLoS modelling indicates that Hameldon Hill will have visibility of WTGs within the Offshore Array.

Other Aviation Activities

17.4.2.14 Other aviation activities of relevance could include:

- General military low flying operations; and
- Military and civilian 'off-route' fixed-wing and helicopter operations, including SAR missions and offshore helicopter operations in support of the oil and gas industry.

17.4.2.15 There are multiple offshore helidecks within the vicinity of the Offshore Array. To achieve a safe operating environment under low visibility, a consultation zone with a 9 nm radius is present around each offshore helideck. This means that obstructions such as WTGs within the radius must be consulted on with the helideck operators to maintain safe offshore helicopter operations alongside the Proposed Development.

17.4.2.16 Bristow Group currently supply the helicopters used in SAR operations in the vicinity of the Offshore Array. For SAR operations to be carried out safely, the MCA require developers to fulfil WTGs spacing, marking and lighting requirements. The nearest

SAR helicopter base to the Offshore Array is Caernarfon Airport, located 114.6 km to the south of the Offshore Array as presented in Figure 17.1.

17.4.3 Data Sources

17.4.3.4 The primary data source of aviation related data to be used during desk-based studies in support of the EIA is the UK AIP. There are no official AIP charts produced by any Isle of Man government authority. The UK AIP contains details on airspace and en route procedures as well as charts and other air navigation information. A summary of relevant data sources providing information and guidance that will be considered as part of the EIA process is provided in Table 17.1.

Table 17.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
CAP 032 UK AIP, CAA 2023	Contains information on facilities, services, rules, regulations and restrictions in the UK airspace.	Full coverage
UK Military AIP, MOD 2023	The main resource for information on flight procedures at all military aerodromes.	Full coverage
Wind farm self-assessment maps, NATS 2012	Maps provided by NATS to ascertain potential impact of WTGs on their enroute electronic infrastructure.	Full coverage
Offshore infrastructure data, North Sea Transition Authority (NSTA) 2023.	Regularly updated NSTA offshore shapefiles.	Full coverage
Helideck Certificates, Helideck Certification Authority (HCA) 2023.	Provides regularly updated offshore helideck certifications.	Full coverage
European Multi service Meteorological Awareness (EUMET), Operational Programme for the Exchange of Weather Radar Information (OPERA) Database 2023.	Contains information for weather station radars throughout the UK.	Full coverage

17.4.4 Summary of key receptors

17.4.4.4 The key receptors, as identified in section 17.4 above, are as follows:

- Civil PSR systems including NERL radars;
- Isle of Man Airport CTR;
- Isle of Man and Walney IFPs;
- Military PSR Equipped Airfields;
- Military AD Radars;
- Eskmeals Danger Area;
- Helicopters involved in oil and gas activities;
- Helicopters involved in SAR activities; and
- Met Office Radar Hameldon Hill.

17.4.5 Future baseline

17.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

17.5 Identification of impacts and effects

17.5.1 Key parameters for assessment

17.5.1.4 The military and civil aviation scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- WTGs within the Offshore Array have a maximum tip height of 389 m above LAT (385 m AMSL), for the purpose of assessing RLoS from radar systems as per the MDS;
- The Offshore Array will contain a maximum of 100 WTGs; and
- This assessment will consider all military and civil aviation receptors, and where available, their associated radar systems within possible RLoS of the Proposed Development.

17.5.2 Commitments

17.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to military and civil aviation are described in Table 7.2 below.

Table 17.2: Relevant commitments to Military and Civil Aviation.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co33	Development of, and adherence to, an AtoN Plan (ANP).	MIC condition.	To confirm compliance with legal requirements with regard to lighting and marking of structures to prevent collision for pilots of aircraft flying at low altitudes in aircraft under low visibility and Visual Flight Rules (VFR).
Co35	Development of a Search and Rescue (SAR) checklist carried out in accordance with Maritime Guidance Note (MGN) 654.	MIC condition.	Spacing, marking and lighting criteria must be met by the windfarm to allow helicopters involved in SAR

ID	Measure proposed	How this measure will be secured	Rationale
			operations can carry out activity safely and efficiently.
Co36	Development of, and adherence to, an ERCoP ensuring that requirements for planning of emergency responses at sea are met.	Consent condition(s).	The document will ensure requirements are met relating to emergency response planning for at-sea renewable energy installations and requirements for SAR helicopter operations in and around the Offshore Renewable Energy Installations (OREI).
Co37	Appropriate marking of the final positions of infrastructure on UKHO admiralty charts and aeronautical charts, including provision of detail regarding the positions and heights of structures to relevant stakeholders.	MIC condition.	To ensure pilots are aware of obstacles introduced to the area as a result of the Proposed Development.

17.5.3 Approach to assessment of likely significant effects

- 17.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on military and civil aviation at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.
- 17.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.
- 17.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 7.2 above and in the Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage;
 - The evidence for effects on military and civil aviation based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified military and civil aviation lead.
- 17.5.3.7 The impacts which have been identified as having the potential to result in LSE and will therefore be considered in detail at the assessment stage are listed in the Impacts Register (Annex 5.B). Section 17.7.3 sets out the proposed approach to assessment in relation to these impacts.

17.6 Proposed approach to the EIA

- 17.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on military and civil aviation associated with the Proposed Development that have (or do not have) the potential to result in LSE.
- 17.6.1.5 In line with the Scoping Strategy (Annex 5.C):
- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 17.7.2; and
 - **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 17.7.3.
- 17.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 17.6.1.7 For military and civil aviation, the assessment of impacts will also follow specific guidance. This is further detailed within section 17.7.3 below.
- 17.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

17.7 Post-scoping

17.7.1 Overview

- 17.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For military and civil aviation, the scoping study has identified:
- Two impacts which have the potential to result in No LSE; and
 - Five impacts which have the potential to result in LSE.

17.7.2 No LSE and next steps

- 17.7.2.4 Where no LSE is identified, the Applicant will present further information to justify and seek agreement on these conclusions in the form of position papers to relevant stakeholders via the Lifeline Services Technical Advisory Group (TAG) of the Evidence Plan Process (see Chapter 6, Consultation). This will consist of information provided alongside preliminary RLoS analysis post-scoping regarding:
- CAP764, which states that effects of WTGs on SSRs are only considered when WTGs are located closer than 10 km. The nearest SSR to the Offshore Array is over 80 km away; and
 - OPERA guidelines, which state that where WTGs are located more than 20 km from C-Band weather radars, there is no need for the project to be submitted for

impact studies. The nearest weather radar is located over 130 km from the Offshore Array.

17.7.3 LSE and next steps

Supporting Studies

17.7.3.4 The EIA process will be supported by further desk-based studies, including RLoS modelling that will identify and examine in greater detail sensitive aviation and radar receptors.

17.7.3.5 Studies will be undertaken in parallel with consultation with relevant stakeholders via the Lifeline Services TAG of the Evidence Plan Process (see Chapter 6, Consultation). This will provide a detailed understanding of potential impacts. It is expected that consultation will be an iterative process, allowing for any concerns that are raised to be considered throughout the pre-application phase and in finalising the application.

Assessment Methodology

17.7.3.6 The EIA will assess the potential impacts on military and civil aviation identified in the Impacts Register (Annex 5.B).

17.7.3.7 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor. In addition to this general approach, the assessment of impacts on military and civil aviation will also follow the guidance documents listed in section 17.2.

17.7.3.8 In assessing the significance of the effects from the Proposed Development, it is necessary to identify whether or not there will be an impact on aviation operations. For the purposes of the assessment, no detailed grading will be made of the magnitude of the impact or sensitivity of the receptor on the basis that any potential reduction in aviation safety cannot be tolerated. Instead, the following definitions of basic significance will be used as defined below:

- Major Significant – Receptor unable to continue safe operations or safe provision of air navigation services (radar) or effective AD surveillance in the presence of the WTCs. Technical or operational mitigation of the impact is required.
- Moderate Significant – Receptor able to continue safe operations but with some restrictions or non-standard mitigation measures in place.
- Not Significant – The Proposed Development will have little impact on the aviation stakeholder, or the level of impact will be acceptable to the aviation stakeholder.
- No Change – The Proposed Development will have no impact and will be acceptable to the aviation stakeholder.

17.7.3.9 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on military and civil aviation receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

17.7.3.10 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on military and civil aviation receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

17.8 Questions to Consultees

- Question 17.1: Do you agree with the Study Area that has been identified for military and civil aviation?;
- Question 17.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 17.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 17.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to military and civil aviation?;
- Question 17.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 17.6: Are there any further data sources or guidance documents that should be considered;
- Question 17.7: Of the PSR systems mentioned, what are the mitigation capabilities of the radars for WTGs;
- Question 17.8: Is it possible to reduce the size of the Eskmeals Danger Areas D406C and D406B?

18 Other Marine Users & Activities

18.1 Introduction

- 18.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to other marine users and activities from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on other marine users and activities receptors.
- 18.1.1.2 The construction, operation and maintenance, and decommissioning of the Proposed Development has the potential to adversely affect other users of the marine environment. The physical presence of Proposed Development infrastructure, and the activities associated with its construction, operation and decommissioning have the potential to cause displacement of activities or access or damage to existing assets or infrastructure.
- 18.1.1.3 This Chapter of this Scoping Report considers the impacts on other marine users that are not already identified and considered within other Chapters. As such, this Chapter should be read alongside the following Chapters of this Scoping Report as these Chapters identify and consider impacts on receptors that are not included within this Chapter:
- Chapter 13, Commercial Fisheries, considers commercial fishing vessels and fleets;
 - Chapter 14, Shipping & Navigation, considers helicopter Search and Rescue (SAR) activities;
 - Chapter 17, Civil & Military Aviation, considers Practice and Exercise Areas (PEXA) and helicopters associated with the offshore oil and gas industry; and
 - Chapter 28, Socio-economics & Tourism, considers offshore recreational receptors.

18.2 Legislation, policy and guidance

- 18.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW.
- 18.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 18.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to other marine users and activities. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 18.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.
- 18.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

18.2.2 Legislation

National legislation

- Submarine Cables Act 2003;
 - Article 5: (Damage to cables) and Article 6: Damage to other apparatus or gear. These articles make provision for the protection of cables in Manx Territorial Seas from intentional or reckless damage (subject to exceptions in an emergency). Article 6 states that any person who injures or breaks another submarine cable or pipeline during the laying or repair of its own cable, it will be liable to the cost of repairing the break or injury. It also states that where the owner of a ship has sacrificed an anchor, a net or any other fishing gear in order to avoid injuring a cable laid in or under Territorial Seas, having taken all reasonable precautions beforehand, he shall be indemnified by the holder of the relevant cable authorisation under the Act.
- Mineral Workings (Offshore Installations) (Isle of Man) Act 1988;
 - This Act extends and amends the Mineral Workings (Offshore Installations) (Isle of Man) Act 1974 and controls the establishment of safety zones around offshore installations in relation to exploitation or exploration of mineral resources.
- Water Pollution Act 1993;
 - Part 2 of this Act controls deposits at sea within Isle of Man Territorial Seas.

International legislation and agreements

- United Nations Convention on the Law of the Sea (UNCLOS);
 - Article 79: Submarine cables and pipelines on the continental shelf. This article protects submarine cables and pipelines and requires States to have due regard for any existing cables or pipelines in position and not prejudice the possibilities of repair; and
 - Article 113: high sea areas. This article requires States to put in place laws and regulations to make it a punishable offence. This article states that if a submarine or power cable is broken or injured wilfully or through culpable negligence (subject to exceptions in an emergency, this will be a punishable offence. If a cable or pipeline is broken during the laying or repairing of another cable, the Applicant will be subject to pay the repair costs.

18.2.3 Policy

National policy

- The Isle of Man Strategic Plan 2016;
 - Transport Policy 13: Development in or around harbours should neither compromise the ability of the harbour to accommodate other commercial or recreational users in a viable manner, nor be detrimental to the character of those harbours of historic interest.
- Manx Marine Environmental Assessment (MMEA) (Isle of Man Government, 2016);
 - Chapter 6.3 of the MMEA identifies the 'Interference with other users of the sea' as a potential effects of offshore renewable energy generation that requires assessment.

18.2.4 Guidance

International guidance

- MCA Marine Guidance Note (MGN) 654 (MCA, 2016) - Safety of Navigation: Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response; and
 - This guidance is mainly for renewable energy installations and includes guidance on marine cable protection and burial within UK waters.
- International Association of Marine Aids to Navigation (AtoN) and Lighthouse Authorities (IALA), Recommendation O-139 on the marking of manmade offshore structures, Edition 2 (IALA, 2013).
 - These recommendations apply to all offshore structures and/or platforms and make specific reference to Offshore Wind Farms and are required for safe navigation, protection of the environment and protection of the structures themselves.

18.3 Study Area

18.3.1.4 The spatial coverage of the other marine users and activities Study Area is dependent on the nature of the type of impact on the receptors identified. These types of impact are grouped into the following for the purposes of identifying Study Areas:

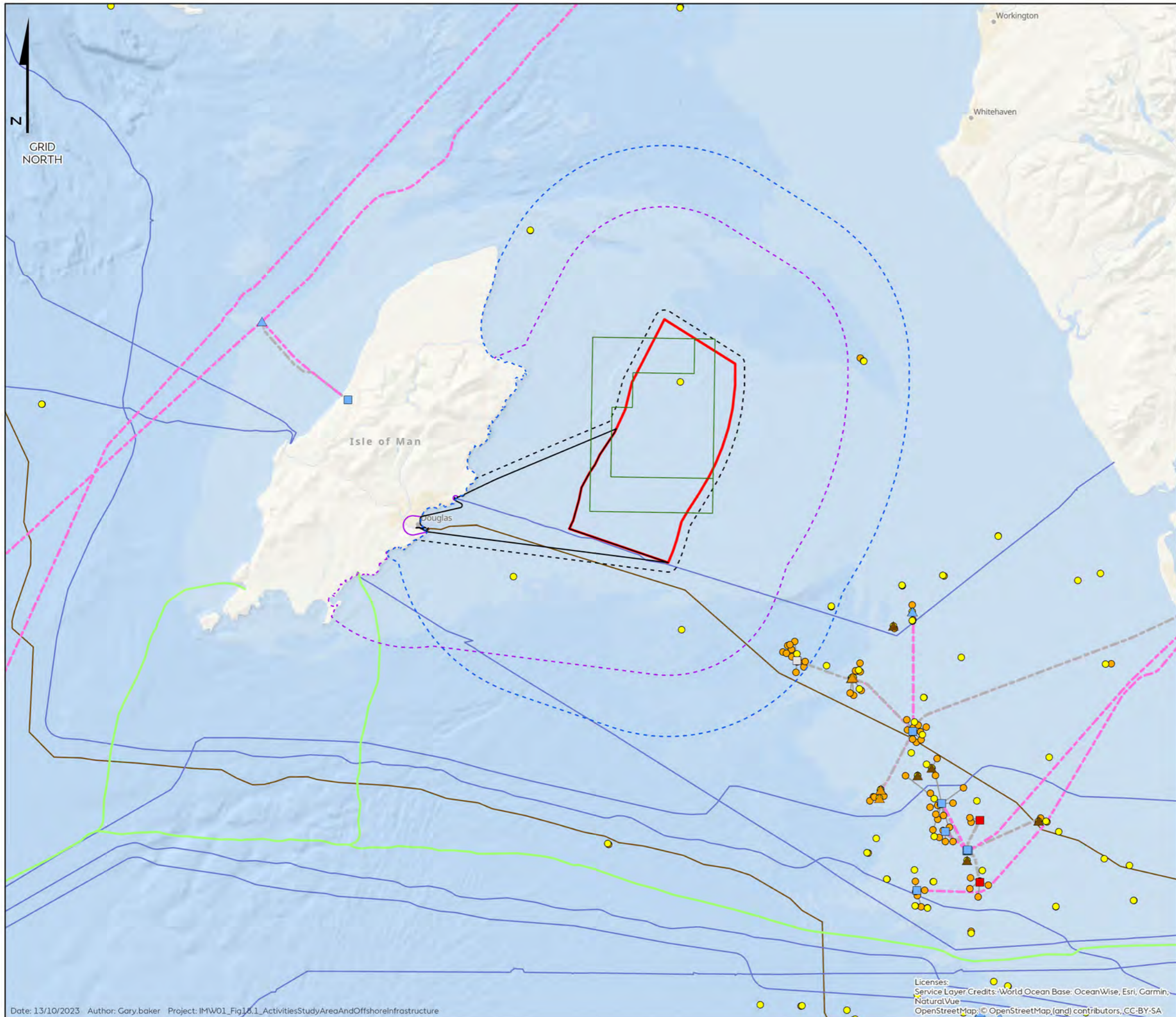
- Impacts associated with direct overlap of activities;
- impacts associated with sediment deposition; and
- Impacts associated with vessel displacement.

18.3.1.5 For impacts associated with direct overlap of activities, the Study Area is limited to the Offshore Array and Offshore Electrical Connection Search Area plus a 1 km buffer around these areas (to account for a 500 m safety zone associated with the Proposed Development, and a 500 m safety zone associated with another marine user). This is hereafter referred to as the Direct Impacts Study Area.

18.3.1.6 For impacts associated with deposition, the Study Area has been determined as the extent of the spring tidal excursion, between 8 and 11.5 km (ABPmer, 2008) resulting in the adoption of a precautionary buffer of 12 km from the Offshore Array and Offshore Electrical Connection Search Area. This is hereafter referred to as the Deposition Impacts Study Area. This is representative of the maximum area over

which suspended sediments may be detected following disturbance as a result of construction activities, and therefore where deposition may occur. This is a precautionary approach, and a Zol will subsequently be developed that will be informed by the physical processes assessment of tidal excursions and sediment plume pathways. This Zol will provide a more refined area in which impacts associated with deposition have to potential to occur.

- 18.3.1.7 For impacts associated with vessel displacement, the Study Area extends 2 nm (3.704 km) from the Offshore Electrical Connection Search Area and 10 nm from the Offshore Array, this is consistent with the approach used in Chapter 14, Shipping & Navigation and is based on standard practice for shipping and navigation assessment Study Areas. This is hereafter referred to as the Marine Traffic Impacts Study Area.
- 18.3.1.8 There are multiple offshore helidecks within the vicinity of the Offshore Array. To achieve a safe operating environment under low visibility, the CAA advise a consultation zone with a 9 nm radius around each offshore helideck (within this range developers are advised to consult with the relevant asset operator to gauge the potential for impacts on helicopter operations). Helicopter operations associated with oil and gas activities within this 9 nm consultation zone are considered within Chapter 17, Military & Civil Aviation.
- 18.3.1.9 These Study Areas are illustrated in Figure 18.1 and Figure 18.2 (data split across two separate figures to aid ease of reading due to the large amount of data). It should be noted that as the application for the Proposed Development progresses, a more refined cable route will be developed and the Study Areas as described above are subject to refinement as a result of this work and further assessments.



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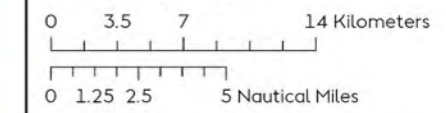
Figure 18.1

Other Marine Users and Activities Study Areas and Subsea Cables, Pipelines, Wells and Structures

- Direct Impacts Study Area
- Deposition Impacts Study Area
- Marine Traffic Impacts Study Area
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Subsea Structure Status**
- ▲ ACTIVE
- ▲ NOT IN USE
- ▲ REMOVED
- Surface Structure Status**
- ABANDONED
- ACTIVE
- NOT IN USE
- Subsea Cable (Type - Status)**
- Power - Active
- Telecom - Active
- Telecom - Proposed
- Offshore Pipelines**
- - - GAS - Active/Precommission/Proposed
- - - OTHER
- Offshore Wells
- Offshore Well Bottom Holes
- Offshore Well Paths
- Crogga Licence Block (112/25)



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:400,000

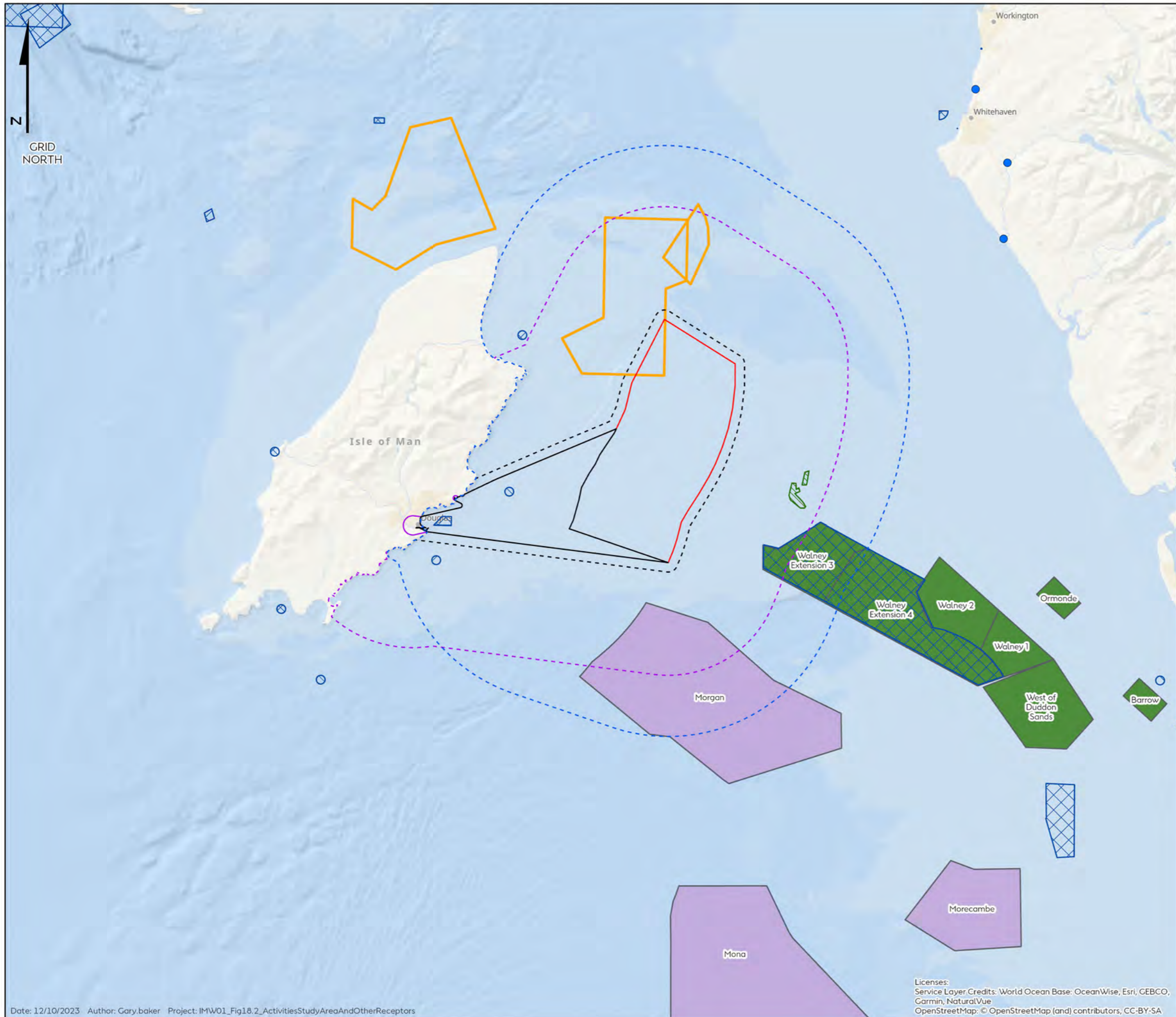


REV	REMARK	DATE
	First issue	13/10/2023

Main Title: Other Marine Users
Document no: IMW01_Fig18.1
Created by: CB
Checked by: RMc
Approved by: SB



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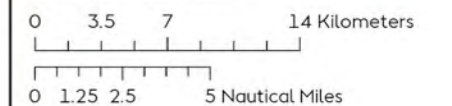
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Figure 18.2
Other Marine Users and Activities Study Areas
and Dredging, Aggregate, Disposal and
Other OWF Sites

- Direct Impacts Study Area
- Deposition Impacts Study Area
- Marine Traffic Impacts Study Area
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array
- Offshore Wind Farm (Status)**
- Concept/Early Planning
- Operational
- Aggregate Area
- Dredging Licence Area
- Marine Disposal Sites
- Waste Water Treatment Plants



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:400,000



REV	REMARK	DATE
	First issue	12/10/2023

Main Title: Other Marine Users
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18.4 Baseline

18.4.1 Overview of baseline

18.4.1.4 Figure 18.1 and Figure 18.2 illustrate the identified receptors within the context of the Study Areas described in section 18.3 above. The following groupings have been used to identify receptors within the Study Area:

- Offshore wind farms;
 - Including areas that are operational such as Walney Extension and those that are in concept/ early planning phases such as Morgan.
- Oil and gas;
 - Including offshore wells, pipelines, subsea and surface structures, both active and not in use.
- Subsea cables and pipelines;
 - Including subsea active and proposed telecom cables and active subsea power cables. It is noted that an active power cable (Manx 1 interconnector) and active telecom cable (BT-MT1) are present within the Offshore Electrical Connection Search Area. The Applicant is also aware that another interconnector cable is proposed between England and the Isle of Man which is not described within the figures above. This is known as the 'Manx 2 Interconnector' and the Applicant understands that this will make landfall at Groudle Bay, although the exact route is not yet known. The Applicant will consult with Manx Utilities to determine the cable route (if known) and timeline for this subsea cable.
- Marine disposal;
 - There are two marine disposal sites within the Offshore Electrical Connection Search Area, one of which is close to Douglas harbour. There are also two further disposal sites within the Traffic Study Area and Disposal Study Area.
- Marine aggregate dredging sites; and
 - There are two aggregate dredging areas within the Traffic Study Area and Disposal Study Area.

18.4.1.5 The following receptors were not identified within the extent of the Study Area:

- Nuclear energy facilities;
- Wave and tidal energy installations; and
- Carbon Capture Utilisation and Storage (CCUS).

18.4.1.6 In order to ensure that an accurate representation of the future baseline is ascertained, the Applicant will consult with the relevant boards, authorities and consultees in order to understand future planned works and associated timelines.

Table 18.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
The Crown Estate (TCE) offshore wind leasing sites - Rounds 1-5	Offshore wind farm bidding areas	There are no other wind farm lease areas within the Isle of Man Territorial Seas (noting that TCE is not responsible for leasing offshore wind sites in Isle of Man Territorial Seas) and therefore TCE provide full coverage of the English and Welsh waters within the Study Areas.
Global Offshore Map, (4COffshore)	Offshore wind farm sites	Full coverage of all Study Areas
Coastal nuclear power plants, (EMODnet)	Nuclear energy facilities	Full coverage of all Study Areas
UK Marine Energy Database (UKMED), (RenewableUK)	Wave and tidal sites	Full coverage of all Study Areas
Offshore Oil and Gas Activity, (North Sea Transition Authority)	<ul style="list-style-type: none"> Oil and gas activity including: pipelines, offshore wells, hydrocarbon fields and petroleum licensed blocks; and CCUS including: Storage licences, Carbon Storage Areas (Provisional Awards). 	Full coverage of all Study Areas
Crogga Limited	Indicative location of the Crogga Proposed Exploration Well (accuracy to be confirmed).	Crogga well location and licensed exploration block.
Kingfisher Information Service – Cable Awareness (KIS-ORCA)	Subsea cables and pipelines	Full coverage of all Study Areas
UK Disposal Site Layer, (Cefas)	Marine disposal sites	Full coverage of all Study Areas
Aggregates Site Agreements (England, Wales & NI), (The Crown Estate)	Marine aggregate sites	Partial coverage - England, Wales and Northern Ireland
Data from the Dol on Manx marine aggregate sites	Marine aggregate sites	Partial coverage - Isle of Man waters
Current working area charts, North West, (BMAPA)	Marine aggregate sites	Partial coverage – English and Welsh waters

18.4.2 Summary of key receptors

18.4.2.4 The following key receptors have been identified as they fall within the Study Areas described in section 18.3:

- Crogga Gas Field in Block 112/25;
- Morgan offshore wind farm;
- Walney extension offshore wind farm;
- BT-MT1 telecom cable;
- Manx 1 and Manx 2 Interconnectors; and
- Douglas Bay disposal site.

18.4.3 Further data collection to be undertaken

18.4.3.4 Further to the high-level characterisation of the baseline within this section of the scoping report, a detailed desk-based analysis of data will be subsequently undertaken. Most of the data used will be acquired from the public domain, however in some instances, the Applicant may request datasets and further information from the Isle of Man government or individual operators (such as cable operators) where it identifies gaps in its understanding of the baseline.

18.4.3.5 Data analysis is expected to be undertaken in parallel with consultation with relevant stakeholders to provide a detailed understanding of potential impacts. It is expected that consultation will be an iterative process, allowing for any concerns that are raised to be considered throughout the pre-application phase and in finalising the application.

18.4.4 Future baseline

18.4.4.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

18.5 Identification of impacts and effects

18.5.1 Key parameters for assessment

18.5.1.4 The other marine users and activities scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- The Offshore Array area of 74 nm² (253 km²) located 11 km from shore at its nearest point, in water depths of 10 to 37 m;
- The construction of up to 100 Wind Turbine Generators (WTGs) with one of various fixed foundation options and with a minimum rotor lower tip height of 30 m above LAT and associated vessel movements;
- The construction of up to five Offshore Substations within the Offshore Array on piled jacket foundations with associated seabed preparation and scour protection and associated vessel movements;
- The installation, operation, maintenance and decommissioning of a maximum of 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection;
- The regular maintenance of the structures through the lifetime of the Proposed Development and associated vessel movements;

- Decommissioning of the site to remove all offshore structures above the seabed and associated vessel movements; and
- 500 m advisory safety zones for construction, major maintenance and decommissioning.

18.5.2 Commitments

18.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to other marine users and activities are described in Table 18.2 below.

Table 18.2: Relevant commitments to other marine users and activities.

ID	Measure proposed	How this measure will be secured	Rationale
Co5	Preparation and implementation of an Operation and Maintenance (O&M) Plan including a schedule of O&M activities.	Consent condition(s).	To set out and plan for scheduled maintenance activities during the operational life of the Proposed Development.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co8	Promulgation of information to sea users via Notices to Mariners (NtMs) to DoI	MIC condition.	To ensure mariners are afforded sufficient advanced notice of offshore works.
Co9	Establishment of offshore construction safety zones of up to 500 m around infrastructure during construction and major maintenance in the O&M phase.	MIC condition.	To minimise the risk of impacts to surface navigation.
Co33	Development of, and adherence to, an Aids to Navigation Plan (ANP).	MIC condition.	To confirm compliance with legal requirements with regard to lighting and marking of structures for shipping, navigation and aviation purposes.
Co36	Development of, and adherence to, an ERCoP ensuring that requirements for planning of emergency responses at sea are met.	Consent condition(s).	To ensure requirements are met relating to emergency response planning for at-sea renewable energy installations and requirements for SAR helicopter operations in and around the Offshore Renewable Energy Installations (OREI).
Co37	Appropriate marking of the final positions of infrastructure on UKHO admiralty charts and aeronautical charts, including provision of detail regarding the	MIC condition.	To ensure users (pilots and mariners) are aware of obstacles introduced to the area as a result of the Proposed Development.

ID	Measure proposed	How this measure will be secured	Rationale
	positions and heights of structures to relevant stakeholders.		

18.5.3 Approach to assessment of likely significant effects

18.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on other marine users and activities at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

18.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the project progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

18.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 18.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on other marine users and activities based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified other marine users and activities lead.

18.6 Proposed approach to the EIA

18.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on other marine users and activities associated with the Proposed Development that have (or do not have) the potential to result in LSE.

18.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 18.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 18.7.3.

18.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a

consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

18.6.1.7 For other marine users and activities, the assessment of impacts will also follow specific guidance. This is further detailed within section 18.7.3 below.

18.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

18.7 Post-scoping

18.7.1 Overview

18.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For other marine users and activities, the scoping study has identified:

- Three impacts which have the potential to result in No LSE; and
- Three impacts which have the potential to result in LSE.

18.7.2 No LSE and next steps

18.7.2.4 Where no LSE is identified within the Impacts Register (Annex 5.B), the Applicant will compile further evidence, such as the provision of underwater noise modelling, a validated hydrodynamic model or the provision of information regarding application of commercial crossing agreements in order to support these conclusions and present this through direct consultation with the affected parties. The Applicant will consult and present this information to all relevant offshore developers, operators and marine users with the intention of agreeing no LSE prior to application and therefore these impacts will not form part of the impact assessment at the point of application.

18.7.2.5 Some development and infrastructure and the associated impacts are identified as no LSE on the basis of no known spatial or temporal overlap, such as nuclear energy facilities. In these instances, the Applicant will provide this information to the DoI and seek agreement on no LSE in the absence of any potentially impacted stakeholders.

18.7.3 LSE and next steps

Supporting studies

18.7.3.4 For those impacts associated with disposal, the physical processes modelling and assessment of tidal excursions and sediment plume pathways will be used to define a Zol to further refine the receptors that may be effected.

18.7.3.5 For those impacts associated with traffic, the Navigational Risk Assessment (NRA) will be used to identify the risk to marine traffic associated with other marine users.

Assessment Methodology

18.7.3.6 The EIA will assess the potential impacts on other marine users and activities identified in the Impacts Register (Annex 5.B).

18.7.3.7 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

18.7.3.8 For other marine users and activities, impact magnitude will be determined by duration, frequency, repetition and permanence of impacts. Consideration will also

be given to the lack of ability or reduction of the ability of other marine users to carry out activities.

- 18.7.3.9 The sensitivity of other marine users and activities receptors will be determined by the importance or value of the infrastructure to local, regional or national economy, with due regard given to the importance and dependence that island communities such as the Isle of Man have on certain connecting infrastructure such as interconnectors or telecom cables. Sensitivity will also be informed by the vulnerability and recoverability of the receptor.
- 18.7.3.10 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 18.7.3.11 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other marine users receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

18.8 Questions to Consultees

- Question 18.1: Do you agree with the Study Areas that have been identified for other marine users and activities;?
- Question 18.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline;?
- Question 18.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B);?
- Question 18.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to other marine users and activities;? and
- Question 18.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?



Moor Vannin Offshore Wind Farm Scoping Report

Volume 3: Onshore Chapters

19 Onshore Ecology

19.1 Introduction

- 19.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to onshore ecology from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on valued ecological features (CIEEM, 2018).
- 19.1.1.2 This Chapter covers onshore ecology and intertidal ornithology only, in relation to construction, operation and decommissioning of the Proposed Development, this is primarily landfall and the Terrestrial Electrical Connection Cable.
- 19.1.1.3 This topic interfaces with other topics and, as such, should be considered alongside:
- Chapter 9, Offshore Ornithology, which considers the effects on marine ornithology;
 - Chapter 10, Benthic Subtidal & Intertidal Ecology, which assesses the potential effects on marine habitats and includes the intertidal zone; and
 - Chapter 11, Marine Mammal & Megafauna, which provides the scope of assessment for the marine mammals and migration routes over the sea of mobile species, e.g. bats and birds;
 - Chapter 23, Noise & Vibration which assesses the likelihood of resulting effects on noise and vibration sensitive receptors; and
 - Chapter 24, Air Quality, which considers the likelihood of resulting effects on air quality receptors.

19.2 Legislation, Policy and Guidance

- 19.2.1.1 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 19.2.1.2 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 19.2.1.3 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to onshore ecology. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 19.2.1.4 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 19.2.1.5 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

19.2.2 Legislation

National legislation

- 19.2.2.1 The Wildlife Act 1990 is the main piece of Manx legislation relating to the protection of the Isle of Man's fauna and flora. The provisions are broadly the same as those of the Wildlife and Countryside Act (WCA) 1981 (as amended) in England and Wales. The Act sets out schedules of Manx species of animal and plant that are protected by law from injury or disturbance. It also establishes the legal protection of Areas of Special Scientific Interest (ASSI) and National Nature Reserves (NNR), as well as other site designations.
- 19.2.2.2 The Isle of Man is a United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere reserve and a signatory of several international conventions including the Ramsar Convention on Wetlands of Importance, the Bonn Convention on migratory species and the Rio Convention on Biodiversity.
- 19.2.2.3 Trees in the Isle of Man are protected under the Tree Preservation Act 1993 administered by the DEFA.

International legislation and agreements

- 19.2.2.4 Under the UK Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Regulation 5(2) and paragraph 4 of Schedule 4) EIAs must identify, describe and assess, the direct and indirect potentially significant effects of a proposed development on biodiversity, with particular attention paid to protected species and habitats.

19.2.3 Policy

National policy

- 19.2.3.1 The Isle of Man Strategic Plan (2016) sets out an Island-wide policy framework and general policies for the development of and use of land across the Island. If a development could have a significant environmental effect, then an EIA is required.
- 19.2.3.2 The Strategic Plan also contains high level objectives, which include:
- To embrace the principles of Sustainable Development;
 - To protect, maintain and enhance the built and rural environment (including biodiversity); and
 - To minimise environmental pollution to air, water and land.

19.2.3.3 'Managing our Natural Wealth' – The Isle of Man Biodiversity Strategy 2015-2025, sets out how government, business and people can conserve and enhance nature. The strategic aims are:

- Managing biodiversity changes to minimise loss of species;
- Maintaining, restoring and enhancing native biodiversity, where necessary; and
- Involving society in understanding, appreciating and safeguarding biodiversity.

19.2.3.4 Biodiversity Action Plans have been written for a number of habitats and species.

19.2.4 Guidance

International guidance

19.2.4.1 The United Nation's definition of biodiversity (UNEP, 2020) is *"the variety of life on Earth and the natural patterns it forms. The biodiversity seen today is the result of 4.5 billion years of evolution and, increasingly, of human influence as well. It forms the web of life, of which humans are integral and upon which people and planet so fully depend"*.

19.2.4.2 Additionally, guidance used to inform this Chapter includes best practice as published by CIEEM in line with the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018).

19.3 Study Area

19.3.1.1 The scoping Study Area is shown in Figure 19.1. Two landfall locations are currently considered, these are Douglas Bay and Groudle Bay. Should landfall be made at Douglas Bay, the Terrestrial Electrical Connection Cable will travel inland to connect to proposed Onshore Substation (OnSS) at the potential grid connection locations at Middle River substation, located at the existing Pulrose Power Plant, or Lord Street substation. No cable connection from Groudle Bay to the potential grid connection locations at Douglas is considered as part of this scoping report.

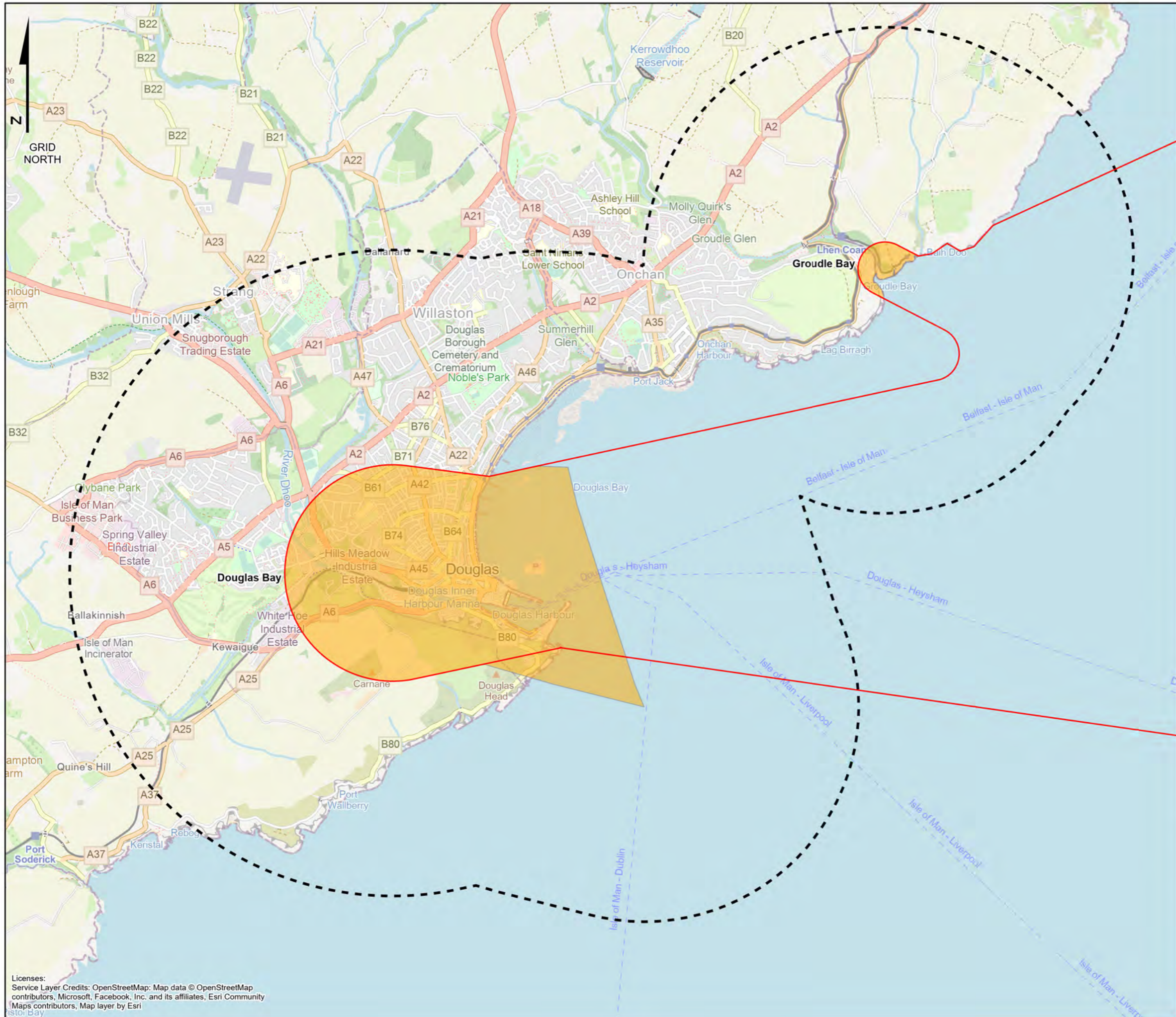
19.3.1.2 The Onshore Study Area at the Douglas Bay landfall location generally comprises Douglas Bay, which is an intertidal area with a beach. To the south of the bay is a working port that incorporates a gas terminal located on Battery Pier and to the furthest southern point Douglas Head lighthouse. At the southern extent of the Onshore Study Area the coastal geography comprises cliffs beyond the port. Moving inland the habitat is more urban, predominantly roads/houses and commercial buildings.

19.3.1.3 The Study Area at Groudle Bay comprises a more rural landscape, with woodland sites (Groudle Glen and Groudle registered tree area) and Ochan Wildlife Site present nearby. The Study Area has been defined to encompass the direct terrestrial footprint of the Proposed Development area. Survey buffers have been applied, as per best practice, to ensure that such impacts such as disturbance are adequately covered in respect of wintering waterfowl and bats. These include:

- A 500 m coastal habitat buffer for surveys of wintering waterfowl, as disturbance can impact birds within 500m. This will establish the species and numbers of birds at risk of disturbance. This is accepted best practice in the absence of official written guidance; and

- A 2 km buffer for bats to include wider areas, in which foraging and commuting are likely to occur. The extent of such areas, known as core sustenance zones, depends on the species³.
- 19.3.1.4 The need for buffers in respect of other species would be determined once desk study data and initial surveys have been completed.
- 19.3.1.5 The Study Area will also be informed by the Study Areas described within Chapter 23, Noise & Vibration, and Chapter 24, Air Quality, for identification of receptors that may be impacted by noise and air quality related effects such as wintering waterfowl, breeding birds as well as habitats sensitive to changes in air quality.
- 19.3.1.6 The Study Area will be refined and amended for future stages of the planning process following identification of constraints and the selection of routing for the Terrestrial Electrical Connection Cable, as well as feedback received within the Scoping Opinion.

³ Bat Conservation Trust (BCT) 2016 Core sustenance zones explained. <https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones> [Accessed September 2023]



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Figure 19.1

Onshore Ecology Study Area

- Scoping Boundary
- Onshore Ecology Study Area
- Onshore Ecology Study Area 2 km Buffer



Coordinate System: British National Grid

Scale@A3: 1:35,000

0 0.25 0.5 1 1.5 Kilometres

0 0.25 0.5 1 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

Figure 19.1 Onshore Ecology Study Area

Document no: 404.011945.00001.0017.0

Created by: FGI

Checked by: JSA

Approved by: IFO



19.4 Baseline

19.4.1 Overview of the baseline

- 19.4.1.1 This section provides a brief overview of the habitats and species, which are present within the Study Area in the Isle of Man following a review of the available sources of data (see Table 19.1).
- 19.4.1.2 In 2016, the Isle of Man was designated as a UNESCO World Biosphere Region in recognition of the diversity and uniqueness of its natural environment. As of April 2023, the Isle of Man has 25 ASSIs. ASSIs are broadly similar to Sites of Special Scientific Interest (SSSI) in the UK and are designated in accordance with published selection criteria under the Wildlife Act 1990. There is one NNR, 10 Marine Nature Reserves (MNR), one Area of Special Protection (ASP) for Birds (note: not the equivalent of a SPA in the UK) and five Bird Sanctuaries. Wildlife Sites and Registered Tree Areas are also present, however these are non- statutory designations.
- 19.4.1.3 Within the Study Area the following statutory sites relating to onshore ecology are present (see Figure 19.2):
- Douglas Bay MNR;
 - Little Ness MNR and;
 - Douglas Head ASSI; and
 - Statutorily designated sites are covered in the Protected Sites Assessment (PSA) (in Chapter 32, Protected Site Assessment).
- 19.4.1.4 The 'Managing our Natural Wealth' - The Isle of Man Biodiversity Strategy 2015-2025 contains Biodiversity Action Plans, which have been written or are in preparation for several habitats and species, and these underline the importance of these species and habitats concerned in the Isle of Man context.

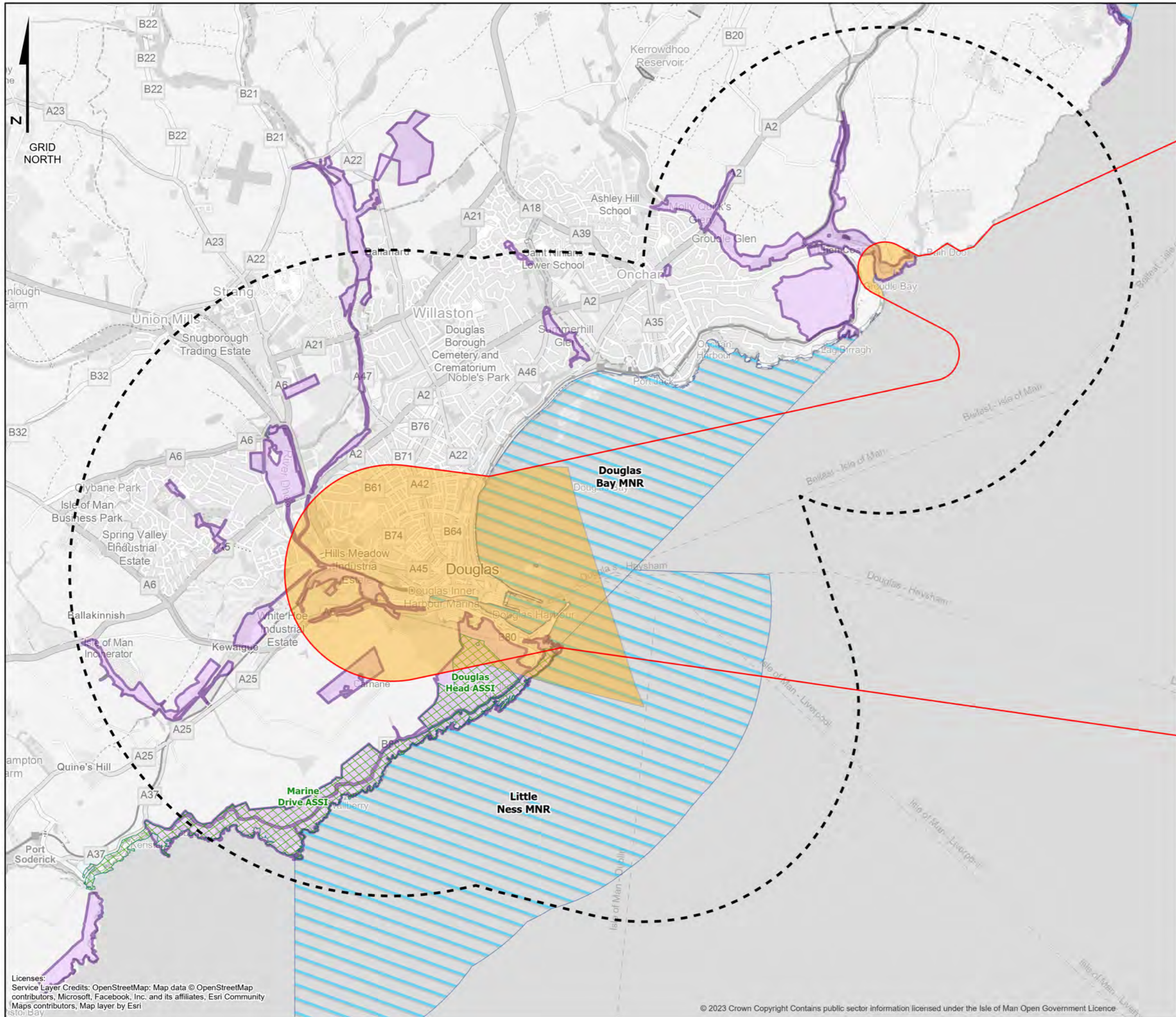
Non-statutory wildlife sites

- 19.4.1.5 As of March 2023, there are 92 designated Wildlife Sites. Of these, 62 are area-based designations that support important habitats or species, covering 2.15% of the Island (1,230 hectares/ 3,041 acres). An additional six sites are linear designations covering 10.4 km of coastline of known importance to grey seals as haul-out or breeding areas. Finally, there are also 24 Conservation Verges, designated to recognise and protect through appropriate management the best roadside habitats on the Island.
- 19.4.1.6 Within the Study Areas the following non- statutory sites are present (see Figure 19.2):
- Groudle Registered Tree Area;
 - Obchan Head Wildlife Site; and
 - Groudle Glen Wildlife Site.

Protected and controlled species

- 19.4.1.7 Although no habitat or protected species surveys have been undertaken yet, the Douglas Bay part of the Study Area generally comprises a man-made/ built urban environment, although some natural habitats including watercourses and associated riparian corridors occur to the west and there are also natural habitats associated with Douglas Bay. The key habitats and species that will likely require assessment are: botanical species that colonise walls and urban habitat, waterfowl and wading birds using the foreshore for foraging, birds nesting on buildings or the harbour wall and bats that may use buildings nearby.

- 19.4.1.8 To date, no site visits have been undertaken within the Groudle Bay part of the Study Area, but aerial footage and other desk-based data suggests that this part of the Study Area comprises a rocky coastline, with wooded habitat and gorse (*Ulex europaeus*) scrub habitat.
- 19.4.1.9 Nine species of bat are present in the Isle of Man, namely, common pipistrelle *Pipistrellus pipistrellus*, brown long-eared bat *Plecotus auratus*, Daubenton's bat *Myotis daubentonii*, soprano pipistrelle *Pipistrellus pygmaeus*, Leisler's bat *Nyctalus leisleri*, Natterer's bat *Myotis nattereri*, whiskered bat *Myotis mystacinus*, Nathusius pipistrelle *Pipistrellus nathusii* and lesser horseshoe bat *Rhinolophus hipposideros*.
- 19.4.1.10 The Isle of Man supports important breeding populations of chough *Pyrrhocorax pyrrhocorax*, hen harrier *Circus cyaneus* and peregrine falcon *Falco perrigrinus*. Curlew *Numenius arquata* populations are vulnerable, but generally stable on the island, elsewhere in the UK this species is rapidly declining. Chapter 9, Offshore Ornithology, considers potential effects on the offshore elements of the Proposed Development on migratory birds.
- 19.4.1.11 Protected species in the Isle of Man in general include common lizard *Zootoca vivipara*, common frog *Rana temporaria*, two species of moth, three species of crickets/ grasshoppers, bats, whales, dolphins, seals, birds, plants (all orchids) and 75 additional species, which are protected against being picked or destroyed.
- 19.4.1.12 Under Section 14 of the Wildlife Act 1990, it is an offence to plant or '[otherwise cause to grow in the wild](#)' certain invasive plant species such as Japanese knotweed *Fallopia japonica*.
- 19.4.1.13 Desk study data for the Study Area will be sought via the following sources detailed in Table 19.1.



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Figure 19.2

Ecological Designation Plan

-  Scoping Boundary
-  Onshore Ecology Study Area
-  Onshore Ecology Study Area 2 km Buffer
-  Area of Special Scientific Interest (ASST)
-  Designated Wildlife Site
-  Marine Nature Reserve (MNR)



Coordinate System: British National Grid

Scale@A3: 1:35,000

0 0.25 0.5 1 1.5 Kilometres

0 0.25 0.5 1 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

Figure 19.2 Ecological Designation Plan
 Document no: 404.011945.00001.0019.0
 Created by: FGI
 Checked by: JSA
 Approved by: IFO



19.4.2 Data sources

19.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 19.1.

Table 19.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Manx Biological Recording Partnership.	Phase 1 habitat information, records of protected, notable and controlled species.	Island-wide coverage of habitats and species.
DEFA	Designated Sites including Wildlife Sites. Online Map viewer.	Island-wide coverage.
British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) data	Wintering Bird Counts. Selected sites are known as WeBS areas where counts are undertaken up to monthly by volunteers.	Douglas Bay is a WeBS site although counts have only occurred in 2020 and 2021 and not the full number of visits. Groudle Bay is not covered by WeBS data.
Special Interest Groups	Manx Bat Group	Island-wide coverage.
	Manx Bird Life	
Previous development projects/ studies involving the collection of ecological data.	Information in the public domain, which contains relevant information of potential use to the Proposed Development.	Unknown. May include port developments, subsea cable, coastal defence or beach management studies.
Monographs on certain species	Many bird species are well studied and some are subject to monographs, which detail their ecology and behaviour. This information may be useful to the Proposed Development and the assessment of LSE.	Species, which are of conservation concern and, which occur in the Isle of Man in important numbers.

19.4.3 Summary of key receptors

19.4.3.4 The onshore ecology assessment will consider the following valued ecological features:

- Habitats (not encompassed by the designations discussed in section 19.4.1) (likely intertidal habitat, riverine, woodland and gorse scrub); and
- Protected and Notable Species (likely protected plant species, reptiles, intertidal birds, nesting birds, bats and badgers).

19.4.3.5 Whilst not of ecological value, the existing presence and potential for the introduction or spread of invasive non-native species will also form part of the study, as such species are encompassed by specific legislation in the Isle of Man.

19.4.4 Further data collection to be undertaken

19.4.4.4 Further data will be obtained through a desk-based study from publicly available sources, such as the BTO WebS counts (e.g. wintering bird data for Douglas Harbour) and through specific searches commissioned through Manx Biological Recording Partnership. The latter will include Phase 1 habitat information and records of protected, notable and controlled species.

- 19.4.4.5 Wintering (November – February) and passage (September- October and March) bird surveys focusing on the use of the intertidal zone of Douglas Bay by foraging waders and waterfowl will be undertaken monthly between September 2023 and March 2024, and again on the same basis, in 2024/25. The surveys will encompass the full tide cycle and will involve a walked route with a surveyor moving between locations (to ensure adequate coverage) during the counts. These surveys will follow methodology comparable to similar projects.
- 19.4.4.6 Habitat surveys of the Terrestrial Electrical Connection Cable routes will be undertaken using the UK Habitat Classification Method (UKHab, 2023) to determine if important habitats are present. The surveys will encompass the Terrestrial Electrical Connection Cable corridor plus a buffer which will be a minimum of 50 m either side. It is anticipated that an initial habitat survey exercise/ walkover will be undertaken in Autumn 2023 and be refined as necessary once final details are known.
- 19.4.4.7 Based on the findings of the above habitat surveys, it may be necessary to undertake surveys for specific species if impacts are predicted. These would be undertaken in accordance with the relevant UK or Isle of Man published guidance on species survey methodology.
- 19.4.4.8 The Onshore Ecological Impact Assessment (OEIA) will bring together the conclusions of the assessments made in other relevant sections of the EIA and along with the information on the existing baseline discussed in section 19.4 of this Chapter, will be used to identify impact pathways and the associated magnitude of the impact on onshore ecology.

19.4.5 Future baseline

- 19.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

19.5 Identification of impacts and effects

19.5.1 Key parameters for assessment

- 19.5.1.4 The Terrestrial Electrical Connection Cables have the potential to cause direct and/ or in-direct habitat loss, disturbance or fragmentation through physical works. The works will principally comprise the landing of offshore cables and installation and burial of cables on land to connect to the local grid connection point and thereafter the operation and maintenance (including repair) of this infrastructure prior to decommissioning activities at the end of the Proposed Development's lifespan.
- 19.5.1.5 The onshore ecology scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:
- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
 - Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Mooir Vannin Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches).

The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.

- Onshore Substation (OnSS): provides housing of the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat loss. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700 m². Max dimensions will be 45 m x 80 m with a max height of 25 m.

19.5.1.6 For further details on these elements, refer to Chapter 3, Project Description.

19.5.2 Commitments

19.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to onshore ecology are described in Table 19.2 below.

Table 19.2: Relevant Commitments to onshore ecology.

ID	Measure proposed	How this measure will be secured	Rationale
Co1	Development of, and adherence to, an INNS Management Plan.	Consent condition(s).	To limit the introduction and/or spread of INNS.
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co15	Development of, and adherence to, a Landscape and Ecology Management Plan (LEMP).	Consent condition(s).	Sets out the key onshore landscape and ecology elements subject to commitment, compensation and enhancement.
Co16	Application for Protected Species Licences to be made to DEFA in respect of works affecting protected species under the Wildlife Act 1990.	MIC condition.	Actions which affect protected species must be licensed to comply with the relevant legislation.
Co17	Development and implementation of a Construction Environmental Management Plan (CEMP).	Consent condition(s).	Sets out onshore commitment measures during onshore construction, including details of the timings of onshore works.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.

19.5.3 Approach to assessment of likely significant effects

- 19.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on onshore ecology at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential impacts and concludes whether they could result in LSE. It provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach via the Evidence Plan Process.
- 19.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application, incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.
- 19.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 19.2 and in the Impacts and Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage;
 - The evidence for effects on onshore ecology based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified onshore ecology topic area lead.

19.6 Proposed approach to the EIA

- 19.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on onshore ecology associated with the Proposed Development that have (or do not have) the potential to result in LSE.
- 19.6.1.5 In line with the Scoping Strategy (Annex 5.C):
- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 19.7.2; and
 - **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 19.7.3.
- 19.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 19.6.1.7 For onshore ecology, the assessment of impacts will also follow specific guidance. This is further detailed within section 19.7.3 below.
- 19.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progresses; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented

within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

19.7 Post-scoping

19.7.1 Overview

19.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For onshore ecology, the scoping study has identified:

- One impact, which has the potential to result in No LSE; and
- Three impacts, which have the potential to result in LSE.

19.7.2 No LSE and next steps

19.7.2.1 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. The additional evidence is likely to include technical position papers; consultation with statutory stakeholders and if required representation at Technical Advisory Groups.

19.7.3 LSE and next steps

19.7.3.4 Impacts which have been identified in the Impacts Register (Annex 5.B) as having the potential to result in LSE during some or all stages of the Proposed Development will be considered in detail at the assessment stage. A brief summary of the main pathways is provided below:

- Habitat loss or disturbance caused by works to install/ bury the cable onshore and impacts on any protected and or notable species reliant upon them;
- The potential for disturbance (via noise, lighting or visual pathways) to occur (alone or in combination) to species/ groups such as wintering and/ or passage birds associated with the Douglas Bay and/ or Little Ness MNRs;
- The potential for disturbance (via noise, lighting or visual pathways) to occur (alone or in combination) to species/ groups at Groudle Bay; and
- Works involving excavation and the movement of soils or removal of vegetation that could result in the spread of invasive plant such as Japanese knotweed.

Supporting studies

19.7.3.5 No specific modelling is proposed to inform the assessment of impacts related to onshore ecology. Desk-based and field-based studies will be required for the assessment, at this time these are: UK Habitat survey, intertidal bird surveys and desk study data requests within the Study Area. Once initial data are collected further surveys are likely to be recommended. The ecology assessment will be supported by studies undertaken for other topics such as noise and air quality, which may undertake modelling. The approaches to these are described within Chapter 23, Noise & Vibration, and Chapter 24, Air Quality.

Assessment methodology

19.7.3.6 The EIA will assess the potential impacts on onshore ecology. The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology.

19.7.3.7 In addition to this general approach, the assessment of impacts on onshore ecology will also follow the following guidance document which is specific to this topic:

- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2.

- 19.7.3.8 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor experiencing the impact.
- 19.7.3.9 For onshore ecology, impact magnitude will be determined by whether an impact would affect large or small areas of a given habitat or population, be permanent or temporary, adverse or beneficial, of short, medium or long-term duration and whether the impact would occur in isolation or is cumulative or interactive.
- 19.7.3.10 Whilst the receptors for the onshore ecology assessment will vary in their sensitivity, it is possible to set-out accepted principles for determining sensitivity such as vulnerability/ susceptibility, ability to accommodate change, recoverability, rarity and level of legal protection status. Receptor sensitivity will be defined in accordance with the methodology set out in Chapter 5, EIA Methodology.
- 19.7.3.11 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 19.7.3.12 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other ecological receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

19.8 Questions to Consultees

- Question 19.1: Do you agree with the Study Area that has been identified for onshore ecology?;
- Question 19.2: Do you agree that the baseline data sources identified are sufficient to adequately characterize the baseline?;
- Question 19.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B);
- Question 19.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to onshore ecology?;
- Question 19.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?; and
- Question 19.6: Is there additional ecological data that any consultee would be willing to share with the project?

20 Land Use & Ground Conditions

20.1 Introduction

- 20.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to land use and ground conditions from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on land use and ground conditions receptors.
- 20.1.1.2 Land use effects could occur as the result of direct impacts to the use of agricultural land, recreational routes or land identified for development purposes, with indirect impacts, such as loss of amenity, being considered within other relevant chapters of the Scoping Report (as detailed below). The assessment of impacts to ground conditions relates to the nature of soils, ground stability and the potential for contaminated land, with areas designated for their geological features also considered to be of importance.
- 20.1.1.3 This Chapter should be read alongside the following Chapters of this Scoping Report:
- Chapter 19, Onshore Ecology, which identifies ecological designations, considered to be sensitive land uses;
 - Chapter 21, Traffic and Transport, which considers the effects on linear receptors, with roads and footpaths;
 - Chapter 22, Onshore Archaeology and Heritage, which identifies onshore archaeology and heritage receptors;
 - Chapter 25, Hydrology, Hydrogeology & Flood Risk, which considers the likelihood of resulting effects on hydrological receptors, with the geology determining the aquifer designation and potential risk to groundwater resources; and
 - Chapter 28, Socioeconomics, Tourism and Recreation, which considers the potential effects on tourism and recreational receptors.

20.2 Legislation, policy and guidance

- 20.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 20.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and

Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 20.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to land use and ground conditions. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 20.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016a) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 20.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

20.2.2 Legislation

National legislation

- 20.2.2.4 Sections 18 and 19 of the Town and Country Planning Act, 1999 control the designation and demolition of conservation areas, respectively. These are of relevance to the assessment, as the Proposed Development has the potential to directly impact, temporarily or permanently, the conservation area land use. Under Section 18 subsection (4) of the Act:

"Where any area is for the time being a conservation area, special attention shall be paid to the desirability of preserving or enhancing its character or appearance in the exercise, with respect to any buildings or other land in the area, of any powers under this Act."

- 20.2.2.5 Additional legislation that is of relevance to the land use and ground conditions assessment are:
- The Tree Preservation Act, 1993 sets out the protection of trees as well as the creation of the Tree Register, which gives a more comprehensive level of protection to trees of a significant amenity value. Trees, particularly Registered Tree Areas, offer a specific and protected land use, whilst some trees have impacts, beneficial or adverse, to the surrounding soil.
 - The Manx Museum and National Trust Act 1959 gives Manx National Heritage the power to acquire land (and associated land uses) to promote the permanent preservation of landscapes, features, animal and plant life, buildings of national interest and, places of national interest or beauty.
 - The Recreation and Leisure Act 1998 sets out the provision of recreational and cultural facilities. Recreational amenities are considered to be important land uses for the general public, providing health benefits.
 - The Tourist Act 1975 is concerned with the official registers of tourist premises of specified classes. The use of accommodation as tourist premises is prohibited unless it is registered under the 1975 Act, which also enables premises to be graded.

- The Highways Act 1986 sets out the creation, protection and recording of Public Rights of Way, important and free recreational assets which could be disrupted, damaged or severed by linear developments.

International legislation and agreements

20.2.2.6 Specific UK legislation and guidance on the assessment of contaminated land is principally provided under:

- Part 2A of the Environmental Protection Act (EPA) 1990, as inserted by Section 57 of the Environment Act 1995; and
- The Contaminated Land (England) Regulations 2006 (2006/1380) make provision for the identification and remediation of contaminated land under Part 2A of the Environmental Protection Act 1990.

20.2.3 Policy

National policy

20.2.3.4 Within the Isle of Man Strategic Plan 2016, policies that are of relevance to land use and ground conditions are:

- General Policy 2: Development which is in accordance with the land use zoning and proposals in the appropriate Area Plan and with other policies of this Strategic Plan will normally be permitted, provided that the development:
 - does not prejudice the use or development of adjoining land in accordance with the appropriate Area Plan; and
 - is not on contaminated land or subject to unreasonable risk of erosion or flooding.
- Environment Policy 14: Development which would result in the permanent loss of important and versatile agricultural land (Classes 1-2) will not be permitted except where there is an overriding need for the development, and land of a lower quality is not available and other policies in this plan are complied with. This policy will be applied to:
 - land annotated as Classes 1/2 on the Agricultural Land Use Capability Map; and
 - Class 2 soils falling within areas annotated as Class 2/3 and Class 3/2 on the Agricultural Land Use Capability Map.
- Environment Policy 24: Development which is likely to have a significant effect on the environment will be required:
 - to be accompanied by an Environmental Impact Assessment in certain cases; and
 - to be accompanied by suitable supporting environmental information in all other cases.
- Environment Policy 26: Development will not be permitted on or close to contaminated land unless it can be demonstrated that there is no unacceptable risk to health, property or adjacent watercourses.

- Environment Policy 28: Development which would be at risk from ground instability, or which would increase the risk from ground instability elsewhere will not be permitted unless appropriate precautions have been taken.

20.2.3.5 Additional policy that is of relevance to the land use and ground conditions assessment are:

- Area Plan for the East 2020
 - Guides development in the area of the Proposed Development, including the current and proposed designations and land uses.
- Public Rights of Way - Policy & Strategy 2018 – 2028
 - Summarises the DoI's draft policy and strategy plan and their approach to improving the Island's public rights of way and green lane network over the next 10 years.

International policy

20.2.3.6 International policy that has been used to aid the land use and ground conditions assessment includes:

- Safeguarding our Soils strategy
 - The Department for Environment, Food & Rural Affairs (DEFRA) published a code of practice on the sustainable use of soils on construction sites, which was intended to be helpful in development design and setting planning conditions.
 - Overall, the regime advocates a precautionary approach to dealing with contaminated land, there is clear direction to avoid the "excessive cost burdens" of "wastefully expensive remediation".

20.2.4 Guidance

International guidance

20.2.4.4 UK guidance that is relevant to the land use and ground conditions assessment includes:

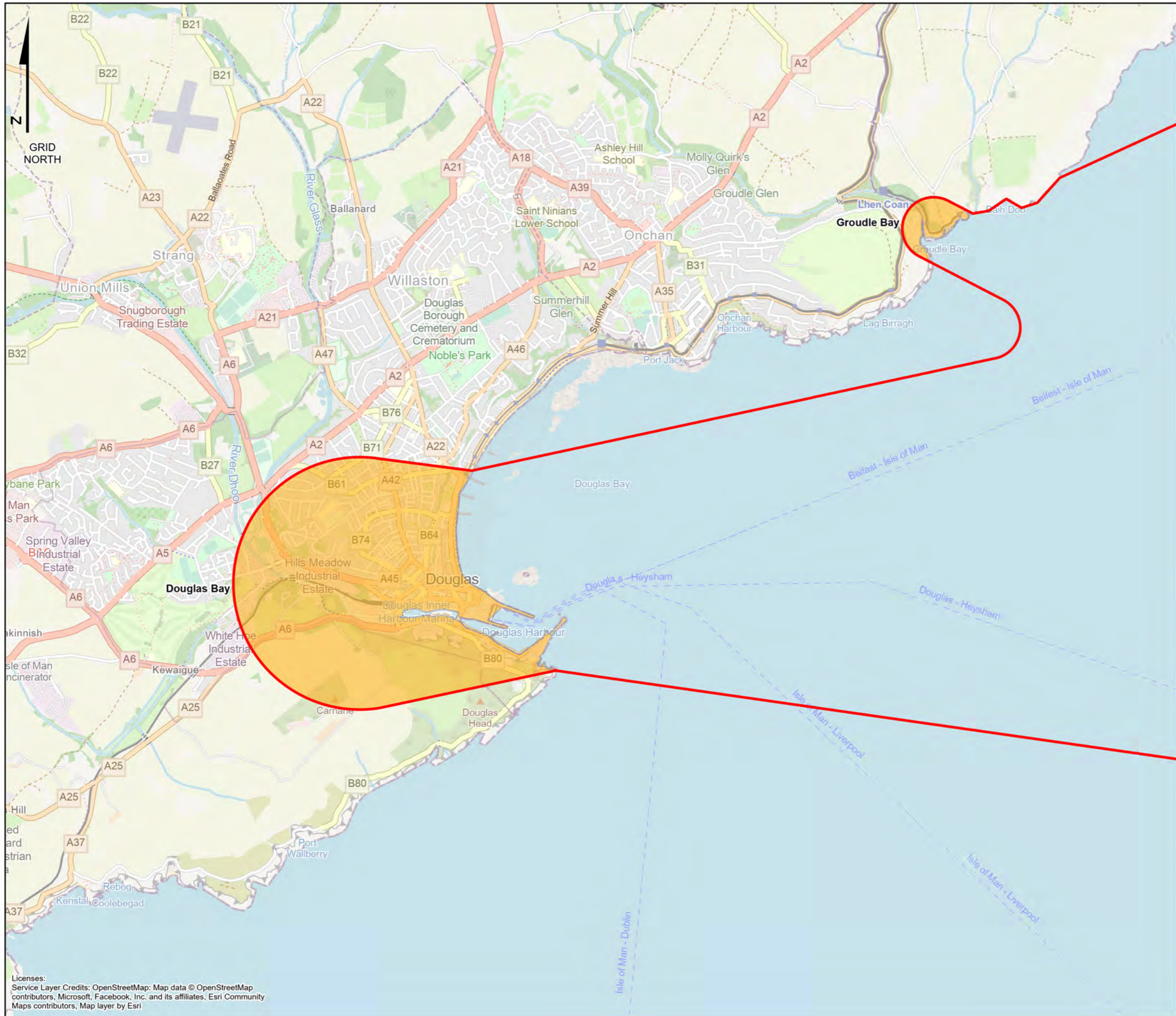
- Highways England, Transport Scotland, Welsh Government and Department for Infrastructure: DMRB LA 109 Geology and Soils (Highways England et al., 2019);
- Highways England, Transport Scotland, Welsh Government and Department for Infrastructure: DMRB LA 112 Population and Human Health (Highways England et al., 2020);
- Environmental Agency: Land Contamination Risk Management (Environment Agency, 2020); and
- BS10175:2011+A2:2017: Investigation of potentially contaminated sites - Code of practice (BSI, 2017).

20.3 Study Area

20.3.1.4 For the purposes of the Scoping Report, the Study Area for land use and ground conditions is the area landward from MLW and is defined as the Study Area shown in Figure 20.1. Areas beyond the Proposed Development boundaries are not considered, due to potential effects occurring from direct impacts only. The Study Area considers

two potential landfall locations, one within the area of Douglas Bay and the other within the area of Groudle Bay.

- 20.3.1.5 The Study Area will be refined and amended for future stages of the planning process following identification of constraints and the selection of routing for the Terrestrial Electrical Connection Cable route, as well as feedback received within the Scoping Opinion. This is expected to result in a reduction in the size of the Study Area as it will follow more closely the route of a preferred Terrestrial Electrical Connection Cable corridor, preferred locations for landfall and the onshore substation connection point when these are known.



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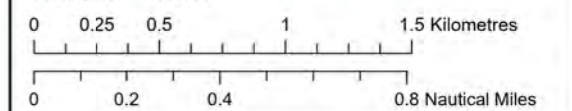
Figure 20.1
Land Use and Ground Conditions
Study Area

- Scoping Boundary
- Land Use and Ground Conditions Study Area



Coordinate System: British National Grid

Scale@A3: 1:30,000



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Figure 20.1 Land Use and Ground Conditions Study Area
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20.4 Baseline

20.4.1 Overview of baseline

Development Land and Businesses

- 20.4.1.4 A large portion of the Study Area is a Building Control Area, along with five Planning Conservation Areas, Registered Tree Areas and Mixed-Use Proposals Areas (DEFA, 2023). Due to the Douglas Bay being one of main entrance points to the Isle of Man, there are several tourism assets throughout the Study Area, such as museums or scenic views.

Private Property and Housing, and Community Land and Assets

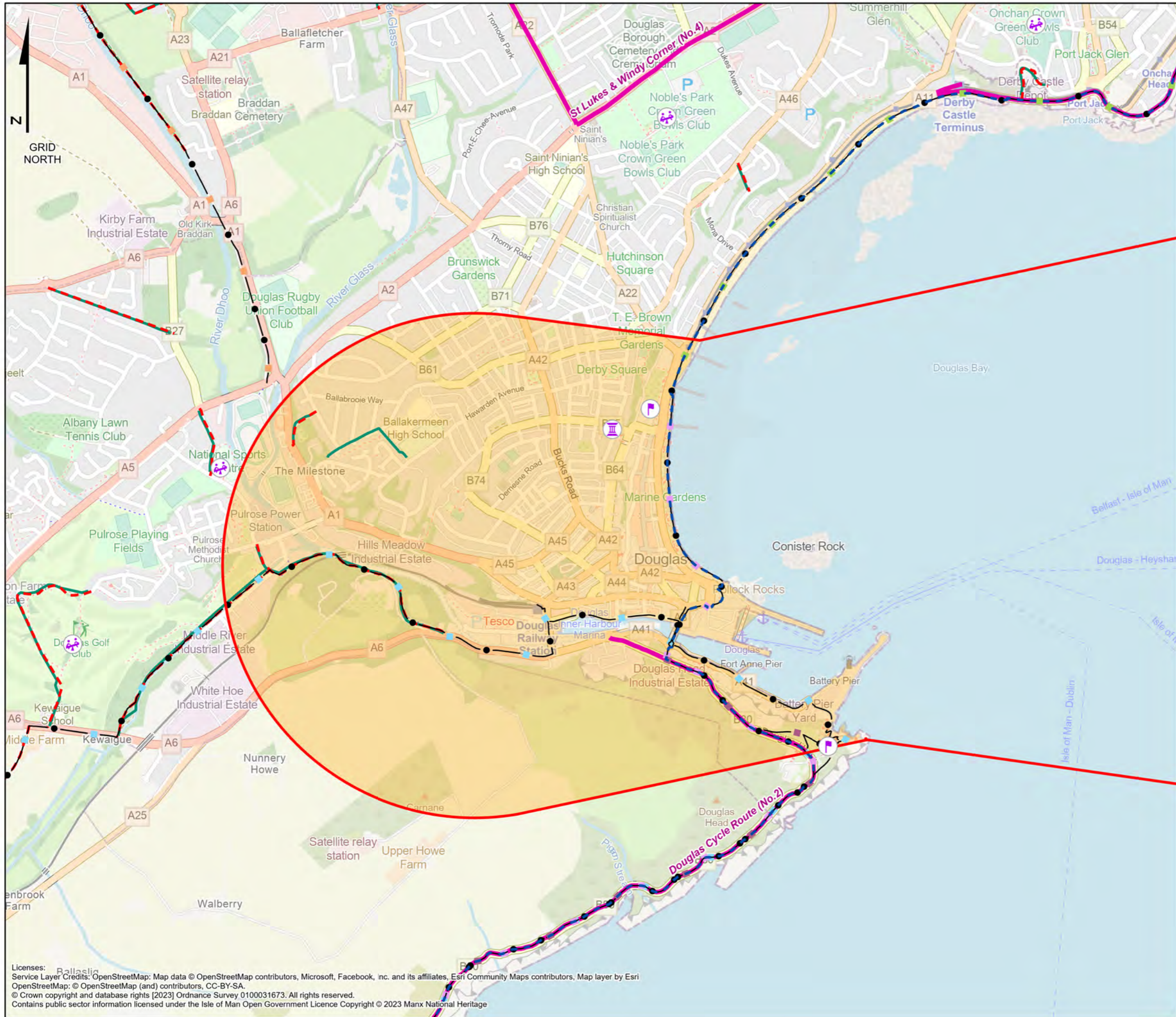
- 20.4.1.5 As with tourism and recreational land, Douglas includes numerous residential and commercial properties. Those considered to be impacted by the Proposed Development would be accordingly described in the ES.
- 20.4.1.6 Community land is considered to be open areas of green land such as common land, green space, and allotments, whilst community assets are village halls, and healthcare and education facilities.
- 20.4.1.7 The Study Area includes several beaches, which could be considered community land, as well as an abundance of community assets. Those which are considered to be impacted by the Proposed Development would be accordingly described in the ES.

Agricultural Land Holdings

- 20.4.1.8 South of Douglas Bay there are small areas of agricultural land within the Study Area, however, it is noted that aerial imagery shows that few of these are serving agricultural purposes (DEFA, 2023a). The quality of this agricultural land ranges from Class 3 in the west to Class 3/4 in the east (Harris *et al*, 2001), which are not considered to be important and versatile agricultural land (Classes 1 and 2) as per Environment Policy 14 of the Isle of Man Strategic Plan (The Cabinet Office, 2016).
- 20.4.1.9 The Study Area in the north at Groudle Bay includes one further small area of Class 3 agricultural land (Harris *et al*, 2001).

Walkers, Cyclists and Horse-Riders (WCH)

- 20.4.1.10 There is one Public Right of Way (PRoW) in the Douglas Bay part of the Study Area and two PRoWs in the Groudle Bay part, all of which are footpaths. Promoted routes include the Raad ny Foillan, a 164 km long-distance footpath, as well as various tourist routes used for walking and cycling, as shown on Figure 20.2 and Figure 20.3. It is noted that no bridle-paths or green lanes were identified, however, pavements and further unmapped paths are present throughout the Study Area (DEFA, 2023b).



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 Figure 20.2
 Douglas Bay Recreational Features

- Scoping Boundary
- Land Use and Ground Conditions Study Area
- P Heritage Attraction
- M Museum
- R Recreational Park or Centre
- - - Raad Ny Foillan
- - - Footpath
- Public Right of Way
- Cycle Route
- Tourist Route**
- Douglas to Port St Mary
- Marine Drive Meander
- Maughold to Douglas
- Steam Heritage Trail
- The Real Fairy Bridge and Marine Drive



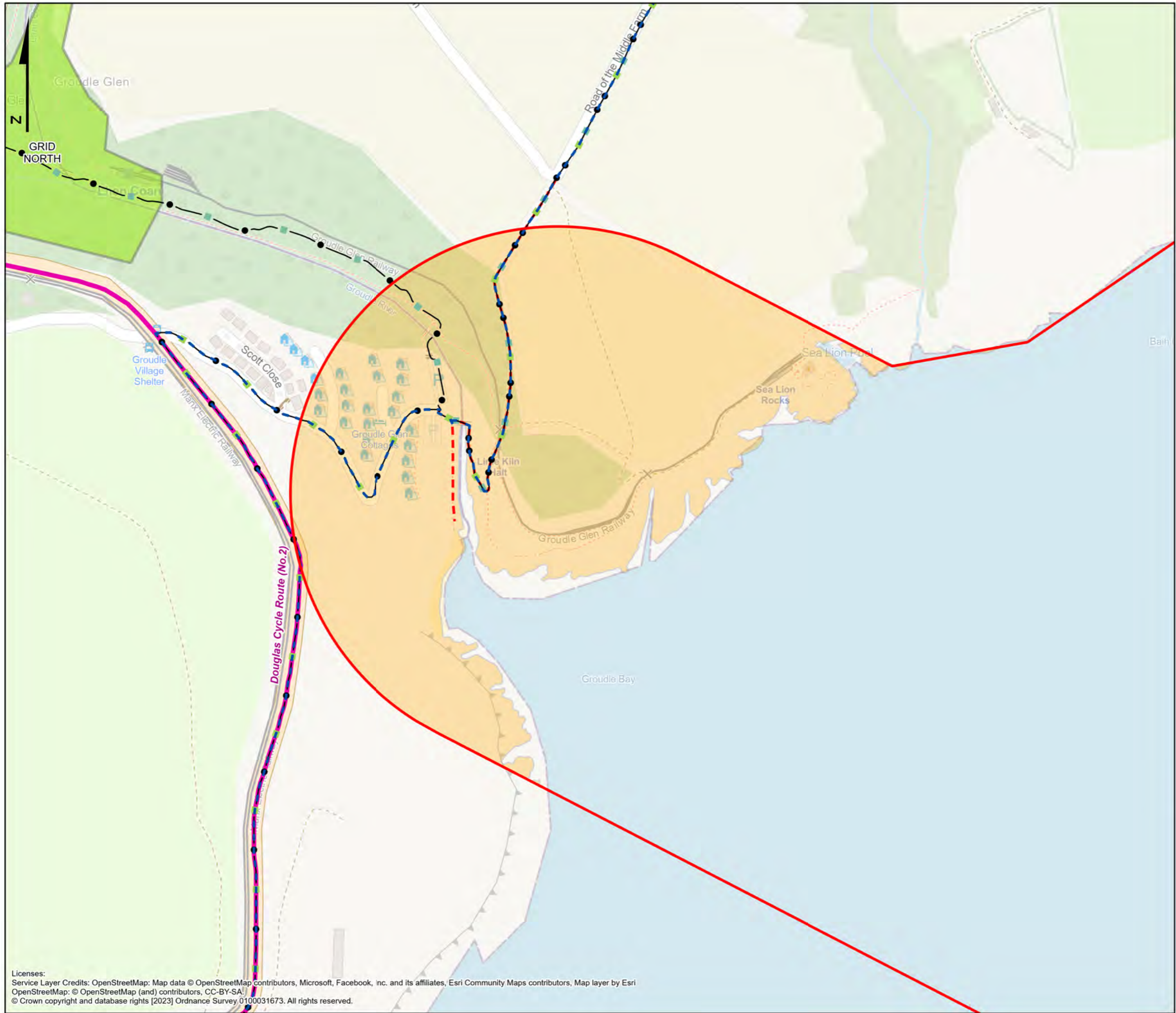
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0 400 800 Meters

0 0.1 0.2 0.4 Nautical Miles

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Figure 20.3

Groule Bay Recreational Features

- Scoping Boundary
- Land Use and Ground Conditions Study Area
- National Glen
- Raad Ny Foillan
- Footpaths
- Cycle Route
- Tourist Route**
- Groule Glen Station Circular
- Maughold to Douglas



Coordinate System: British National Grid
 Scale@A3: 1:3,500



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Figure 20.3 Groule Bay Recreational Features
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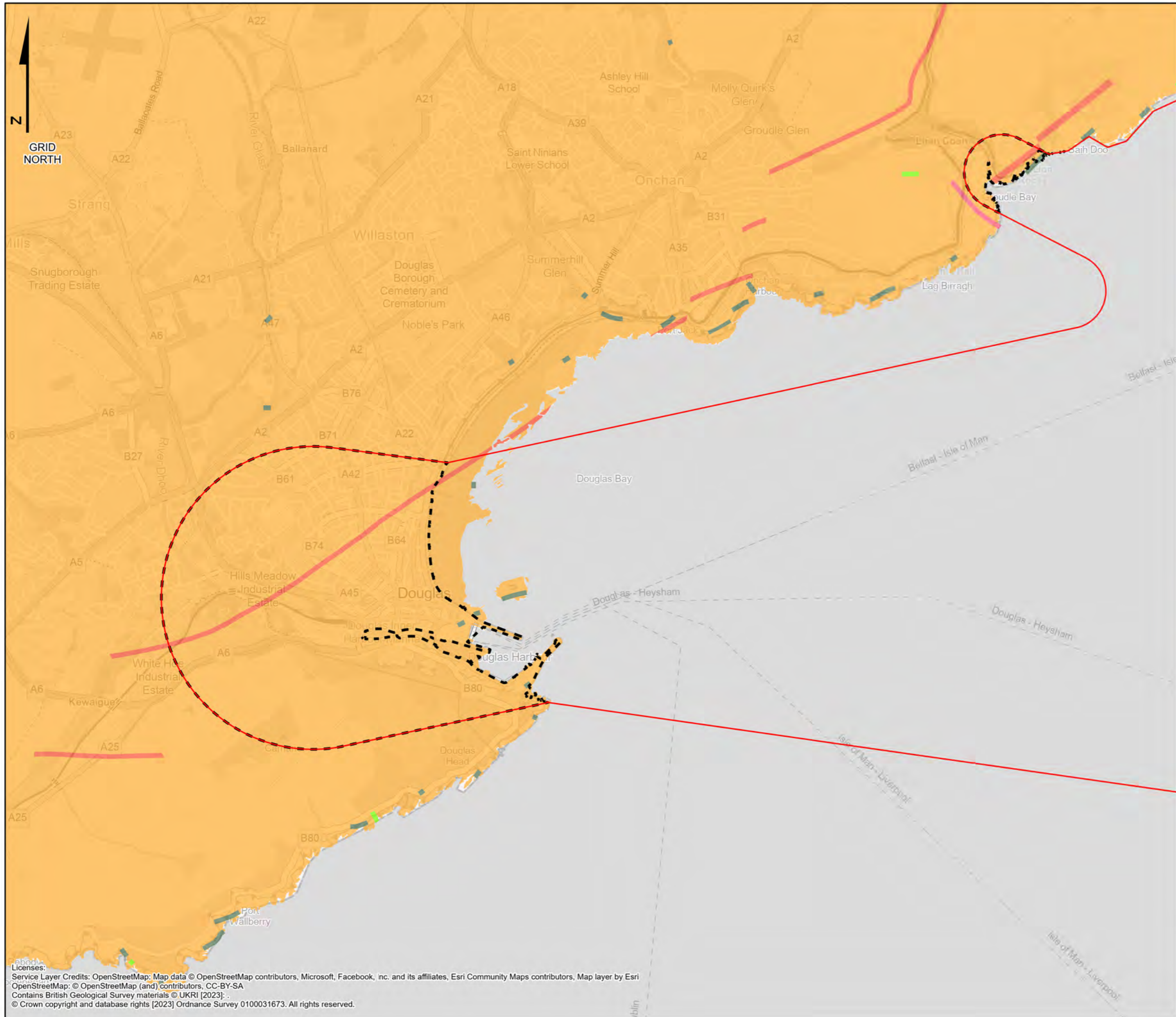
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Geology

- 20.4.1.11 The BGS does not record any artificial ground to be present within the Study Area for the Proposed Development.
- 20.4.1.12 The Terrestrial Electrical Connection Cable Search Area within the area of Douglas is shown by the BGS to be underlain by the Lonan Formation comprising mudstone, siltstone and sandstone.
- 20.4.1.13 The landfall location within the area of Groudle Bay is underlain by the Lonan Formation to the east. The north, south and west of this part of the Study Area is underlain by the Santon Formation comprising sandstone. The bedrock geology within the Onshore Scoping Boundary is shown on Figure 20.4.
- 20.4.1.14 The bedrock is shown to be predominantly overlain by Diamicton, with some localised areas of sand and gravel. The shoreline at Douglas comprises marine beach deposits. The superficial geology within the Onshore Scoping Boundary is shown on Figure 20.5, and listed below:
- Snafell Formation - diamicton. Quaternary Period;
 - Shellag Formation - sand and gravel. Quaternary Period;
 - Sulby Glen Formation - sand and gravel. Quaternary Period; and
 - Marine Beach Deposits – sand. Quaternary Period.

Soils

- 20.4.1.15 The majority of the Study Area for the Proposed Development is classed as urban land and does not include any areas of premium agricultural soils.



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Figure 20.4

Terrestrial Bedrock Geology

- Scoping Boundary
- Land Use and Ground Conditions Study Area
- Bedrock Geology**
- Keristal Member - Sandstone
- Lonan Formation - Mudstone, Siltstone And Sandstone
- Santon Member - Sandstone
- Caledonian Supersuite - Metamafic-rock
- Igneous Rocks**
- North Britain Palaeogene Dyke Suite - Microgabbro



Coordinate System: British National Grid
 Scale@A3: 1:25,000

0 0.4 0.8 1.2 Kilometres

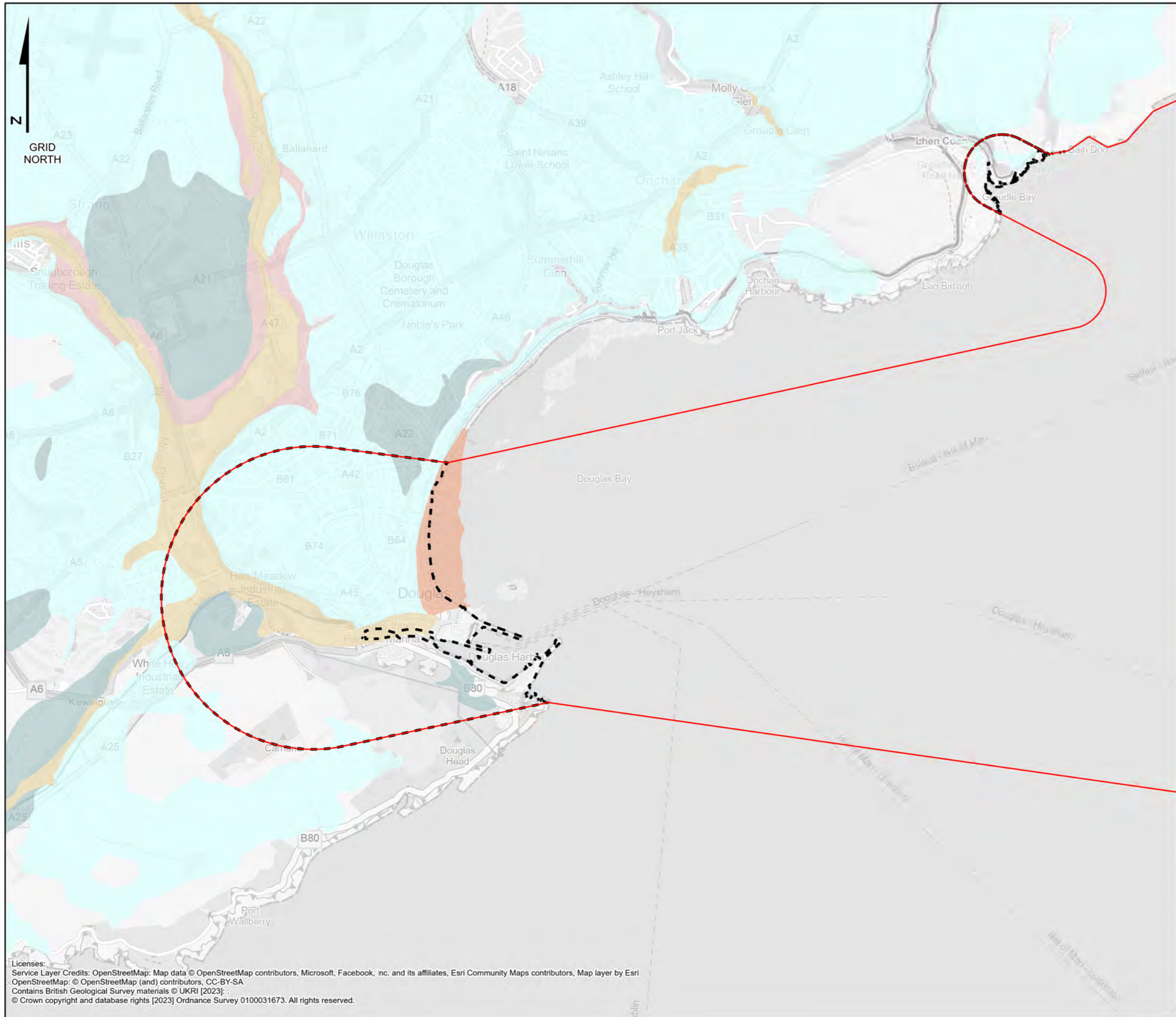
0 0.1 0.2 0.3 0.4 0.5 Nautical Miles

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Figure 20.4 Terrestrial Bedrock Geology
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Figure 20.5

Terrestrial Superficial Geology

- Scoping Boundary
- Land Use and Ground Conditions Study Area
- Superficial Deposits**
- Ballagh Formation - Gravel
- Marine Beach Deposits - Sand
- Shellag Formation - Diamicton
- Shellag Formation - Sand and Gravel
- Snaefell Formation - Diamicton
- Sulby Glen Formation - Sand and Gravel



Coordinate System: British National Grid
 Scale@A3: 1:25,000

0 0.4 0.8 1.2 Kilometres

0 0.1 0.2 0.3 0.4 0.5 Nautical Miles

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Figure 20.5 Terrestrial Superficial Geology
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Mineral resources

20.4.1.16 There are no safeguarded mineral resource sites within the Study Area.

Quarrying and Mining

20.4.1.17 The BGS records several mines and quarries to be present within the Study Area to the west of Douglas Head and south of the Harbour. The sites are recorded to be “ceased”. The information given does not define whether the quarries were used for extraction of superficial or bedrock material.

Designated sites

20.4.1.18 There are no designated sites related to geology and ground conditions within the Study Area.

Contaminated Land

20.4.1.19 The Study Area that incorporates Douglas and Douglas Harbour comprises predominantly developed land and it is considered likely that contaminated land is present. There is limited access to freely available historical mapping for the Study Area, however, internet searches have identified the following areas of potential contamination within the Study Area in proximity to Douglas:

- Manx petroleum heating oil supplier is located at Battery Pier;
- Docks and terminals;
- Former gasworks on Douglas head road;
- Gasworks quarry; and
- Railway/ Electric Tramway.

20.4.1.20 The Study Area comprising Groudle Bay has limited development but does include Groudle Glen Railway.

20.4.1.21 The above list is not considered to be exhaustive, and further detailed review of potential sources of contamination will be undertaken following project refinement during detailed design.

20.4.2 Data Sources

20.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 20.1.

Table 20.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Agricultural Soils of the Isle of Man (Harris et al, 2001).	Agricultural and non-agricultural land uses across the Isle of Man.	Full coverage of the Study Area
Area Plan for the East (The Cabinet Office, 2020).	Planning designations for Douglas Central within the Area Plan for the East	Full coverage of the Study Area
BGS Mapping (British Geological Survey, 2023).	Geology (artificial ground, superficial deposits, bedrock); borehole/well data.	Full coverage of the Study Area
Google Earth.	Satellite imagery.	Full coverage of the Study Area

Source	Summary	Coverage of the Study Area
Island Environment Viewer (DEFA, 2023a).	Maps the island's natural asset including protected areas, field gazetteer and recreational land as well as ecosystems within the Island and its Territorial Sea.	Full coverage of the Study Area
Planning Map Search (DEFA, 2023b).	Details current and historic applications, Registered Buildings, Trees and Tree Areas, Planning Conservation Areas and Building Control Areas.	Full coverage of the Study Area
Land Registry Title Locator (DEFA, 2023c).	Details the register of titles, cautions against registration or applications for priority registrations and planning history, as well as PRoWs	Full coverage of the Study Area

20.4.3 Summary of key receptors

20.4.3.4 The following are considered to be the key land use and ground conditions receptors:

- Development land and businesses;
- Walkers, cyclists and Horse-Riders (WCH);
- Geology;
- Soils; and
- Contaminated land.

20.4.4 Further data collection to be undertaken

20.4.4.4 As the design of the Proposed Development is refined, further work using online data sources will be undertaken to identify individual planning applications, community assets (schools, allotments, halls, etc.), and private homes/ property.

20.4.4.5 In addition, an Envirocheck report would be purchased to identify historical land uses and potential areas of contamination and gather environmental data for the refined area.

20.4.5 Future baseline

20.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

20.5 Identification of impacts and effect

20.5.1 Key parameters for assessment

20.5.1.4 The land use and ground conditions scoping assessment is based on the construction, operation and maintenance and decommissioning of the following Proposed Development infrastructure:

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Isle of Man Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuits and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
- Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700 m². Max dimensions will be 45 m x 80 m with a max height of 25 m.

20.5.1.5 A full description of the Project infrastructure is provided in Chapter 3, Project Description.

20.5.2 Commitments

20.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on land use and ground conditions receptors. A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to land use and ground conditions are described in Table 20.2 below.

20.5.2.5 The identified commitments are subject to further environmental assessment, scheme development and stakeholder engagement/ consultation.

Table 20.2: Relevant commitments to land use and ground conditions.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co17	Development and implementation of a CEMP.	Consent condition(s).	Sets out onshore mitigation measures during onshore construction, including details of the timings of onshore works.
Co19	Development of, and adherence to, a Code of Construction Practice (CoCP).	Consent condition(s).	Sets out the principles for mitigation and management measures during onshore construction.

ID	Measure proposed	How this measure will be secured	Rationale
Co20	Avoidance, where possible, of identified areas of contaminated land, sensitive areas, carbon-rich land and designated areas onshore.	Consent condition(s).	To minimise the impacts of the onshore infrastructure on areas sensitive to the hydrological environment.
Co21	The Terrestrial Electrical Connection Cables and Grid Connection Cables will be buried underground for their entire length.	Consent condition(s).	To minimise the effects of land loss and impacts to soils and geology.
Co22	All onshore temporary working areas will be re-instated to their pre-construction condition as far as reasonably practicable.	Consent condition(s).	To minimise the effects of land loss, and impacts to soils and geology.
Co23	Development of, and adherence to, a Public Access Management Plan (PAMP), incorporating a PRoW Strategy.	Consent condition(s).	Sets out the management of access during construction. Where temporary disruption fo public access cannot be avoided, suitable diversions will be implemented with appropriate signage.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.
Co47	Preparation of a Crossing Schedule.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.

20.5.3 Approach to assessment of likely significant effects

20.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on land use and ground conditions at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

20.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

20.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 20.2 above and in the Commitments Register (Annex 5.A);
- The level of understanding of the baseline environment at this stage;

- The evidence for effects on land use and ground conditions based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified land use and ground conditions lead.

20.6 Proposed approach to the EIA

20.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on land use and ground conditions associated with the Proposed Development that have (or do not have) the potential to result in LSE.

20.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 20.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 20.7.3.

20.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

20.6.1.7 For land use and ground conditions, the assessment of impacts will also follow specific guidance. This is further detailed within section 20.7.3 below.

20.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

20.7 Post-scoping

20.7.1 Overview

20.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For land use and ground conditions, the Scoping Study has identified:

- Twenty- two impacts which have the potential to result in No LSE; and
- Eight impacts which have the potential to result in LSE.

20.7.2 No LSE and next steps

20.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. Further evidence is likely to include Position Papers and consultation with statutory stakeholders. The proposed approach to provision of this further evidence is set out in the Evidence Plan Process Engagement Plan.

- 20.7.2.5 For land use and ground conditions, impacts with no LSE will likely be those which aren't in the Study Area or are routinely mitigated through relevant management plans.

20.7.3 LSE and next steps

Supporting studies

- 20.7.3.4 In accordance with current guidance and best practice, the assessment of land use and ground conditions will commence with a desk-based assessment and a targeted walkover of areas of interest.
- 20.7.3.5 Regarding potentially contaminated sites the desked-based assessment will comprise a detailed review of site-specific data from an environmental database (i.e. Landmark Envirocheck Report⁴), followed by the production of a Conceptual Site Model (CSM) to determine the site's suitability for use, in accordance with Land Contamination Risk Management (LCRM) (Environment Agency, 2023) and BS10175 (British Standards Institute, 2017), using the source-pathway-receptor approach.
- 20.7.3.6 Where potentially significant pollutant linkages are identified this will trigger further phases of assessment that could comprise intrusive ground investigation, the recovery of soil and water samples for laboratory chemical analysis and/ or the provision of a quantitative risk assessment.
- 20.7.3.7 The size of the area(s) requiring investigation will be devised with reference to the likely significance of the identified sources of contamination, the scale of construction works and the sensitivity of the environmental setting of each area. The findings of the initial phases of assessment, and the nature and extent of any identified contamination, could then be used to inform working practices and the design of the Proposed Development. Where the risks cannot be ameliorated through the adoption of control measures, consideration may need to be given to localised remediation.

Assessment Methodology

- 20.7.3.8 The EIA will assess the potential impacts on land use and ground conditions identified in the Impacts Register (Annex 5.B).
- 20.7.3.9 In addition to this general approach, specific DMRB guidance for land use (LA 112 Population and human health (National Highways, 2020a)) and ground conditions (LA 109 - Geology and soils (National Highways, 2019)) will be used for assigning impact magnitudes and receptor sensitivities where they are appropriate for the identified receptors.
- 20.7.3.10 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 20.7.3.11 For land use and ground conditions, impact magnitude will be determined by the physical spatial scale, temporal scale, and wider context of the impact (economic, environmental, social). These will be coupled with the findings of qualitative and quantitative risk assessments, as well as the sensitivity of further receptors that could be impacted in respect of contaminated land. The full criteria for the impact magnitude is provided in Land Use and Ground Conditions Methodology (Annex 20.A).
- 20.7.3.12 The sensitivity of land use receptors will be determined by production, designation, scale of promotion/ importance (international, national, regional, local). Ground conditions receptor sensitivities will be determined by their rarity/ importance/ quality, potential for replacement, designation and sensitivity. Contaminated land would also be determined based on using the aforementioned aspects but in respect

⁴ [Envirocheck - Comprehensive site-specific environmental risk information \(landmark.co.uk\)](https://www.landmark.co.uk/Envirocheck)

of the receptors it could potentially impact as well as the sensitivity of further receptors that could be impacted in respect of contaminated land. The full criteria for receptor sensitivity is given in Land Use and Ground Conditions Methodology (Annex 20.A).

- 20.7.3.13 Land use and ground conditions impacts and effects can be beneficial, neutral or adverse and these would be specified, where applicable. It should be noted that significant effects need not be unacceptable or irreversible.
- 20.7.3.14 The outlined methods used to predict the significance of effects would also be subject to professional judgement by a competent and suitably trained environmental consultant.
- 20.7.3.15 This approach provides a mechanism for identifying the areas where site specific mitigation measures will be required and for identifying mitigation measures appropriate to the risk presented by the Proposed Development. This approach also allows effort to be focused on reducing risk where the greatest benefit may result.
- 20.7.3.16 The approach to assessment and data gathering would be agreed through liaison with relevant bodies prior to commencement and consultation will be undertaken at key stages throughout the EIA process.
- 20.7.3.17 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA. No transboundary effects are possible for land use as this is specific to the Isle of Man.
- 20.7.3.18 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other land use and ground conditions receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

20.8 Questions to Consultees

- Question 20.1: Do you agree with the Study Area that has been identified for land use and ground conditions?;
- Question 20.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 20.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 20.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to land use and ground conditions?;
- Question 20.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 20.6: Do you agree that all relevant legislation, policy and guidance has been identified for the land use and ground conditions assessment, or are there any additional documents that should be considered?; and
- Question 20.7: Can the consultees advise on any specific sources of contamination of concern to them within the Study Area?

21 Traffic & Transport

21.1 Introduction

- 21.1.1.1 This Chapter of the Scoping Report identifies the potential impacts and likelihood of resulting effects of relevance to traffic and transport from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on traffic and transport receptors.
- 21.1.1.2 The traffic and transport assessment will consider the potential effects of severance, pedestrian delay, pedestrian amenity, fear and intimidation, driver delay and accidents and safety.
- 21.1.1.3 This topic interfaces with other topics and, as such, should be considered alongside:
- Chapter 14, Shipping & Navigation, which considers ferry routes and vessel transport;
 - Chapter 17, Military & Civil Aviation, which considers air transport; and
 - Chapter 28, Socioeconomics, Tourism & recreation, which considers public rights of way.

21.2 Legislation, Policy and Guidance

- 21.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 21.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 21.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to traffic and transport. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

21.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

21.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

21.2.2 Policy

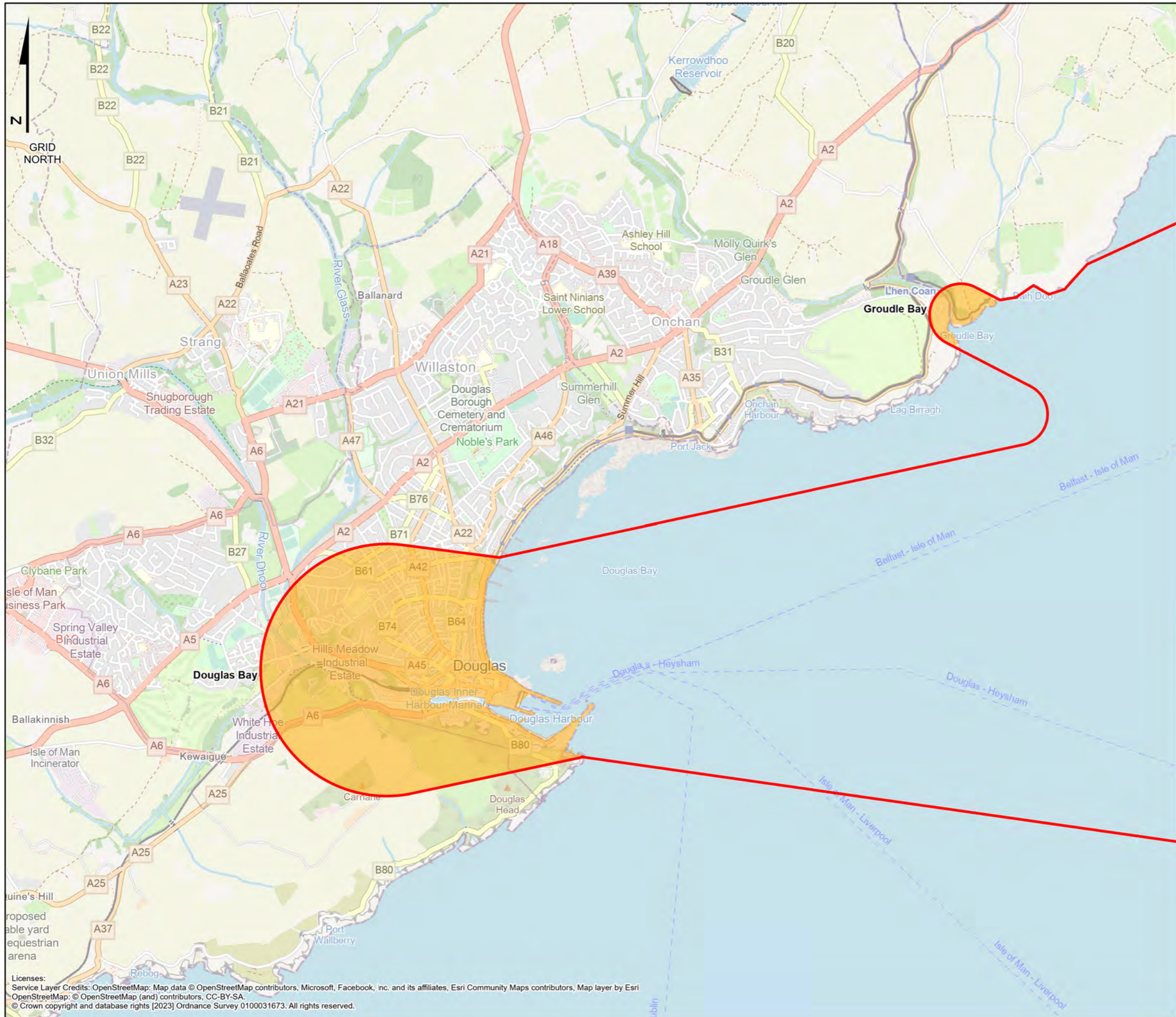
National policy

21.2.2.4 Within the Isle of Man Strategic Plan 2016, policies that are of relevance to traffic and transport are:

- Transport Policy 5 states that *“new development can have a significant impact in terms of the traffic generated by it and the impact on the various modes of travel should be accompanied by a Transport Assessment, which should look at all modes of transport including access by public transport, cycling and on foot.”*

21.3 Study Area

21.3.1.4 The traffic and transport Study Area will comprise the road network in and immediately around Douglas and Groudle Bay including key strategic roads are the A1, A2, A5 and A18, which link Douglas and Groudle to the remaining parts of the Isle of Man. The traffic and transport Study Area is shown in Figure 21.1. Two landfall locations are currently considered, these are Douglas and Groudle Bay. Should landfall be made at Douglas it is from here the Terrestrial Electrical Connection Cable will travel inland towards the proposed Onshore Substation (OnSS).



Moor Vannin

Figure 21.1
Traffic and Transport Study Area

- Scoping Boundary
- Traffic and Transport Study Area



Coordinate System: British National Grid

Scale@A3: 1:30,000

0 0.5 1 1.5 Kilometres

0 0.1 0.2 0.3 0.4 0.5 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	11/10/2023

Figure 21.1 Traffic and Transport Study Area

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Created by: FGI

Checked by: JSA

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21.4 Baseline

21.4.1 Overview of baseline

- 21.4.1.4 The key strategic routes identified in section 21.3, also form part of the Isle of Man Abnormal Load Routes. There are no other strategic roads in the Study Area which is shown on Figure 21.1.
- 21.4.1.5 The Study Area includes roads within the urban area of Douglas and Groudle, which are predominately single carriageway roads subject to a 30 mph speed limit.
- 21.4.1.6 There are a number of bus routes within the Study Area, connecting the smaller towns and villages up to larger towns such as Castletown and Ramsey. There is one train line located in the Study Area, which connects Douglas Station with Castletown/Ronaldsway Airport and Port Erin.
- 21.4.1.7 The highway network within the Study Area, which runs through urban areas, generally have pedestrian footways. Pedestrian footways are also provided along some sections of the A1, A2 and A5.
- 21.4.1.8 Whilst there are no designated cycle routes within the Study Area, it is anticipated that cyclists would use the roads within the urban areas within the Study Area.

21.4.2 Data Sources

- 21.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 21.1.

Table 21.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Isle of Man Government	A report detailing Personal Injury Accident data. This will be used to identify any accident hot spots, which may be affected by the Proposed Development.	Isle of Man
JPublic transport bodies	Timetable and route information for public transport will be collected to understand the potential implications of the Proposed Development on current services. This data will also be used to understand the current levels of sustainable accessibility to the proposed temporary works area.	Isle of Man
Isle of Man Government	Plans showing the adopted highway maintained at the public expense.	Isle of Man

21.4.3 Summary of key receptors

- 21.4.3.4 The transport assessment will consider the traffic implications of the following key receptor groups:
 - Strategic roads;
 - Minor roads;
 - Bus routes;
 - Areas of high pedestrian activity; and
 - Vulnerable road users.

21.4.4 Further data collection to be undertaken

- 21.4.4.4 Further to the high-level characterisation of the baseline within this section of the scoping report, the following information will be gathered to establish the baseline conditions.
- 21.4.4.5 A series of Automatic Traffic Counts (ATCs) will be undertaken to establish the baseline traffic flows on roads within the Study Area that would be used by construction traffic. The ATCs will record the 24-hour traffic flow, vehicle composition and speed on the roads for a 7-day period.
- 21.4.4.6 The ATC surveys will be undertaken in a neutral month in accordance with the DMRB. The timing of the ATC surveys will also need to consider the anticipated construction program and whether the construction phase would coincide with the summer period/The Isle of Man Tourist Trophy race. Other traffic data sources may need to be obtained from the highway authorities for example to establish if the traffic flows on the highway network are higher in the summer.
- 21.4.4.7 The location and timing of the ATC and turning count surveys will be determined once the Study Area has been agreed with the relevant authorities and stakeholders. If the results of the ATC Surveys conclude that construction traffic will result in No LSE, further evidence to support this conclusion via the Evidence Plan Process, details discussed in section 21.7.2. If the ATC Surveys do conclude LSE then further assessment will be undertaken, details discussed in section 21.7.3.

21.4.5 Future baseline

- 21.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

21.5 Identification of impacts and effects

21.5.1 Key parameters for assessment

- 21.5.1.4 The traffic and transport scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:
- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit);
 - Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Mooir Vannin Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints; and
 - Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of one main building, with a max permanent and

temporary area of 6,700m². Max dimensions will be 45mx80m with a max height of 25m.

21.5.1.5 For further details on these elements, see Chapter 3, Project Description.

21.5.2 Commitments

21.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to traffic and transport are described in Table 21.2 below.

Table 21.2: Relevant commitments to traffic and transport.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co17	Development and implementation of a CEMP.	Consent condition(s).	Sets out onshore mitigation measures during onshore construction, including details of the timings of onshore works.
Co19	Development of, and adherence to, a CoCP.	Consent condition(s).	Sets out the principles for mitigation and management measures during onshore construction.
Co28	Development of, and adherence to, a Construction Traffic Management Plan (CTMP).	Consent condition(s).	Sets out procedures for construction traffic routing and temporary construction access.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.

21.5.3 Approach to assessment of likely significant effects

21.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on traffic and transport at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required (for conclusions of LSE), and the further evidence that will be brought forward to support the proposed approach (for conclusions of no LSE).

21.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result

of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

21.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 21.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on traffic and transport receptors based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified traffic and transport Lead.

21.6 Proposed approach to the EIA

21.6.1.4 This The Impacts Register (Annex 5.B) identifies the potential impacts on traffic and transport associated with the Proposed Development that have (or do not have) the potential to result in LSE.

21.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 21.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 21.7.3.

21.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

21.6.1.7 For traffic and transport, the assessment of impacts will also follow specific guidance. This is further detailed within section 21.7.2.4 below.

21.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

21.7 Post-scoping

21.7.1 Overview

21.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For traffic and transport, the scoping study has identified:

- Two impacts which have the potential to result in No LSE; and

- Three impacts which have the potential to result in LSE.

21.7.2 No LSE and next steps

21.7.2.4 Where it has been determined that impacts have the potential to result in No LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. This will be in the form of a Technical Note and it is anticipated that this note will be provided to the relevant Onshore Environment Technical Advisory Group.

21.7.3 LSE and next steps

Supporting studies

21.7.3.4 The EIA will be informed by the preparation of a Transport Assessment, which will be prepared in accordance with the Isle of Man Transport Assessment Guidance. The Transport Assessment will be appended to the EIA and provide further detail on matters such as driver delay.

Assessment Methodology

21.7.3.5 The EIA will assess the potential impacts on traffic and transport identified in the Impacts Register (Annex 5.B).

21.7.3.6 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

21.7.3.7 For traffic and transport, impact magnitude will be determined by the criteria set out in Table 21.3 has been used. However, the absolute level of an impact is also important (e.g. the total flow of traffic or HGVs on a link). In addition, it is important to note that the impacts assessed are not permanent but are temporary and this affects the significance attached to them.

Table 21.3: Magnitude of Impact.

Impact	Magnitude of Impact			
	<i>Very Low</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Severance	Change in total traffic or HGV flows of less than 30%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of 60-90%	Change in total traffic or HGV flows over 90%
Pedestrian Delay	Two- way traffic flow < 1,400 vehicles per hour	A judgement based on the road links with two way traffic flow exceeding 1,400 vehicles per hour in context of the individual characteristics		
Pedestrian Amenity	Change in total traffic or HGV flows < 100%	A judgement based on the routes with >100% change in context of their individual characteristics		
Fear and Intimidation	18hr Ave of <600 veh/hr and <10 mph, <1,000 HGVs in 18 hr	18hr Ave of 600-1,200 veh/hr and 10-15 mph, 1,000-2,000 HGVs in 18 hr	18hr Ave of 1,200-1,800 veh/hr and 15-20 mph, 2,000-3,000 HGVs in 18 hr	18hr Ave of 1,800+ veh/hr and 20+ mph, 3,000+ HGVs in 18 hr
Driver Delay	A judgement based on analysis			
Accidents and Safety	A judgement based on analysis			

- 21.7.3.8 The Sensitivity of traffic and transport receptors will be determined by the vulnerability of the user groups who may use it, e.g. elderly people or children. A sensitive area may be where pedestrian activity is high, for example in the vicinity of a school or where there is already an existing accident issue. The sensitivity of a receptor also takes account of the existing nature of the road e.g. an existing "A" road is likely to have a lower sensitivity than a minor residential road.
- 21.7.3.9 A desktop exercise augmented by a site visit will be undertaken to identify the sensitive receptors in the Study Area. All road links to be used by construction traffic within the Study Area will also be assessed and assigned sensitivity as summarised in section 21.4.
- 21.7.3.10 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 21.7.3.11 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other traffic and transport receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

21.8 Questions to Consultees

- Question 21.1: Do you agree with the Study Area that has been identified for traffic and transport?;
- Question 21.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 21.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 21.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to traffic and transport?;
- Question 21.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?; and
- Question 21.6: Are features such as designated cycle ways available as GIS files to be mapped?

22 Onshore Archaeology & Cultural Heritage

22.1 Introduction

22.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to onshore Archaeology and Cultural Heritage from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on onshore archaeology and heritage receptors.

22.1.1.2 This topic interfaces with other topics and, as such, should be considered alongside:

- Chapter 15, Seascape, Landscape & Visual Impact Assessment, which provides additional information on the possible effects on the seascape and landscape caused by the Proposed Development; and
- Chapter 16, Offshore Archaeology and Cultural Heritage, which provides additional information on the possible effects on offshore archaeology and cultural heritage assets.

22.2 Legislation, policy, and guidance

22.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:

- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
- Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.

22.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

22.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to archaeology and cultural heritage. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

22.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

22.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

22.2.2 Legislation

National legislation

22.2.2.4 Applicable statute in the Isle of Man, in relation to onshore archaeology and cultural heritage would comprises:

- Manx Museum and National Trust Act 1959; and
- Manx Heritage Foundation Act 1982.

22.2.2.5 Manx National Heritage (MNH), which operates under the above Acts, is statutorily responsible for the protection of onshore archaeology and cultural heritage in the Isle of Man down to the MHW mark. The Acts provide for the protection of archaeological remains (including sites, lands, and certain buildings), Designated Monuments, areas of land held in trust for the nation by MNH, and the conservation of the landscape generally. Chapter 16, Offshore Archaeology and Cultural Heritage provides the scope of assessment from the MHW to offshore.

22.2.2.6 The Act covers the following elements of onshore archaeology and cultural heritage:

- Designated Monuments
 - Nationally important archaeological sites and monuments, including certain buildings, may be protected as monuments. Such protection may be afforded through ownership by MNH, the placing of sites into the Guardianship of MNH, or through the placing of a site on a List of Monuments. The protection afforded by different classes of monument varies according to the type of designation.
- Archaeological Artefacts
 - The discovery of any form of archaeological artefacts must be reported to MNH. Any activity which might result in the destruction or alteration of excavated artefacts, including scientific analyses, must also be licensed by MNH.
- Archaeological Excavation
 - All excavation for archaeological purposes must be licensed by MNH. In practice this also extends to other fieldwork activities (for example, geophysical survey and prospection) where the ultimate intention is for further intrusive investigation.
- Export
 - No archaeological artefacts may be exported off the Island without a license from MNH.
- Metal Detecting
 - The use of metal detectors is unrestricted except designated by MNH. As before, artefacts must be reported to MNH.
- Treasure
 - A new Treasure Act came into force in 2017 (the Treasure Act 2017). All items of potential treasure must be reported to MNH.

22.2.2.7 Built heritage, for example Registered Buildings and Conservation Areas, are separately protected under the Town and Country Planning Act 1999.

International legislation and agreements

22.2.2.8 The Isle of Man is a signatory to both the Convention for the Protection of the Archaeological Heritage of Europe (Valletta 1992) and the Convention for the Protection of the Architectural Heritage of Europe (Granada 1985). These are briefly summarised below:

- The Convention for the Protection of the Archaeological Heritage of Europe
 - This Convention (Valletta 1992) replaced the original 1969 London Convention. This reflected the change in threats to archaeology, which now came less from unauthorised excavations, and more from the major construction projects carried out all over Europe from 1980s onwards.
- Convention for the Protection of the Architectural Heritage of Europe
 - The convention (Granada 1985) seeks to reinforce and promote policies for the conservation and enhancement of Europe's heritage. It also affirms the need for European solidarity regarding heritage conservation and is designed to foster practical co-operation among the signatories.

22.2.3 Policy

22.2.3.4 The relevant, and currently the only adopted, Planning Policy Statement comprises Planning Policy Statement 1/01. This statement applies to the Conservation of the Built Environment of the Isle of Man, including policy for the identification and protection of historic buildings, conservation areas and other elements of the environment. The statement identifies that the "historic built environment" includes man-made structures which are judged to be of special architectural or historic interest, or which individually, or as a group, make a vital contribution to the special character of the Isle of Man's rural landscape or historic townscapes. The statement also confirms that some structures will also have the benefit of Statutory protection, for example, Registered Buildings and Conservation Areas.

22.2.3.5 Cultural heritage is also covered within the 'Area Plan for the East: Written Statement' (2020). Section 4 covers 'Landscape Character and Appearance', and this includes the results of a Landscape Character Assessment. The assessment measured landscapes in terms of both their scenic and cultural heritage value. Also, the assessment within the Written Statement, with reference to the landscape strategies and key views, have informed several proposals that protect specific views and viewpoints. Some landscapes require specific proposals due to the sensitivity to change and potential harm to their intrinsic landscape qualities that could result from development. Whereas other landscapes have greater capacity to accept new development and it may be possible that landscape harm could be mitigated through careful design and landscaping measures.

22.2.4 Guidance

22.2.4.4 UK guidance documents have been used in lieu of domestic guidance. This includes the following:

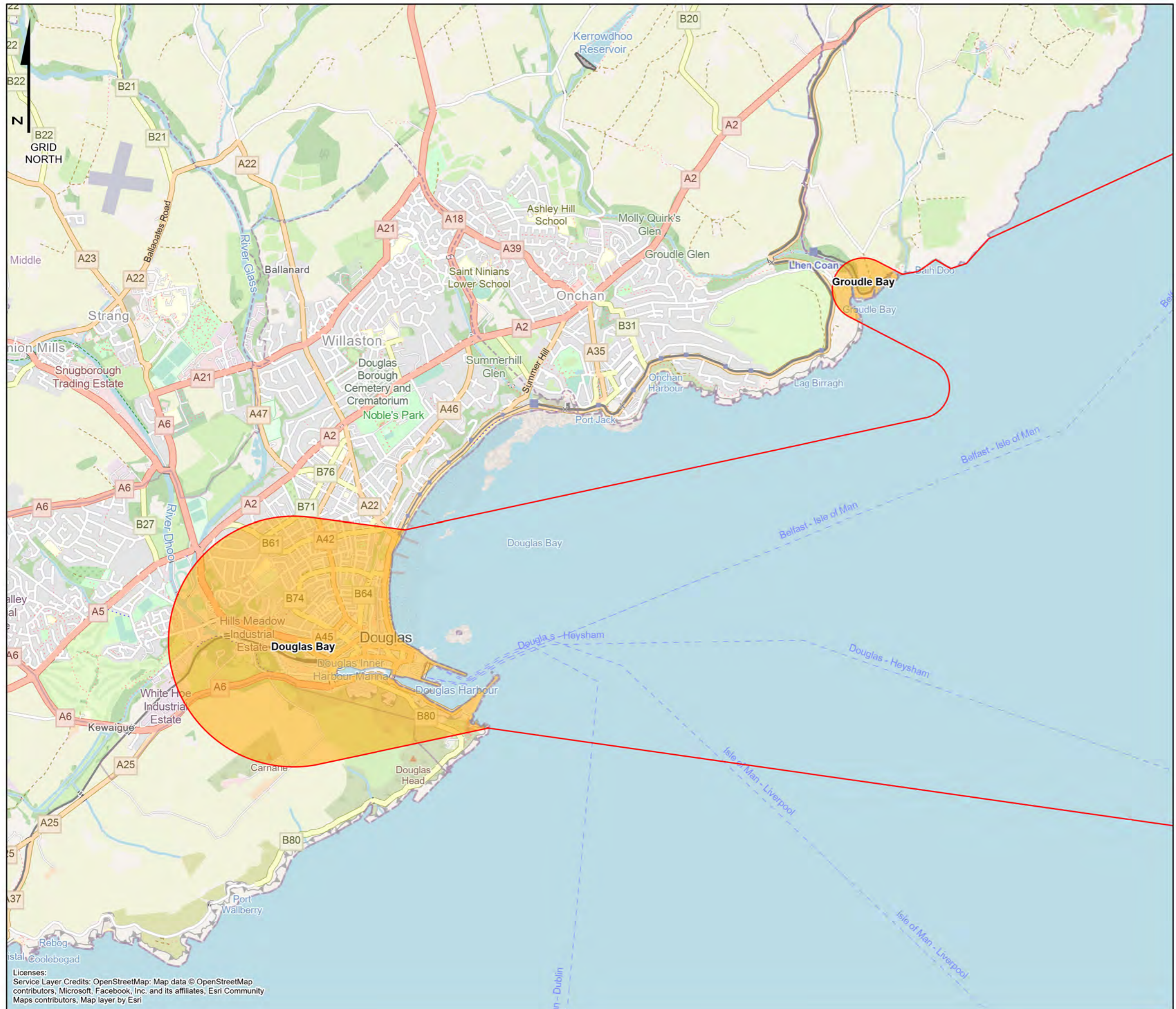
- DMRB LA 106 Cultural Heritage Assessment (Highways England);
- 'Standard and guidance for historic environment desk-based assessment' ClfA, 2020);

- 'Principles of Cultural Heritage Impact Assessment in the UK' (IEMA, Institute of Historic Building Conservation (IHBC), and ClfA, 2021);
- 'The Setting of Heritage Assets Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)' (Historic England, 2017); and
- 'Commercial Renewable Energy Development and the Historic Environment (Historic England Advice Note 15)' (Historic England, 2021).

22.3 Study Area

- 22.3.1.4 A full description of the Proposed Development is provided in Chapter 3, Project Description. This scoping Study Area is shown on Figure 22.1 and considers two potential landfall locations, one within the area of Douglas and the other within the area of Groudle Bay. Should landfall be made at Douglas it is from here the terrestrial Electrical Connection Cable will connect to an Onshore Substation (OnSS).
- 22.3.1.5 The Study Areas of the two landfall locations will have an 'Inner Study Area' and a 'Wider Study Area'. The Douglas 'Inner Study Area' ensures that all archaeology and heritage receptors within the Study Area at Douglas, which have the potential to be affected by both the Terrestrial Electrical Connection Cable route and the Onshore Substation (OnSS), would be captured.
- 22.3.1.6 When the location details of the OnSS and the route of the Terrestrial Electrical Connection Cable route are known, the Study Area will be refined.
- 22.3.1.7 The 'Inner Study Area' at Groudle Bay is illustrated on Figure 22.3 and comprises a rural landscape with woodland areas. The Study Area has been defined to encompass the direct terrestrial footprint of the Proposed Development area.
- 22.3.1.8 In addition, a 'Wider Study Area' has been defined comprising a zone in which indirect visual impacts from the Offshore Array, for example the Wind Turbine Generators (WTGs), might affect onshore designated heritage assets. This 'Wider Study Area' will be determined through analysis of the zone of theoretical visibility (ZTV) of the WTGs which is introduced and explained in detail in Chapter 10, Seascape, Landscape & Visual Impact Assessment. It is proposed that this Study Area will be discussed and agreed with relevant stakeholders as part of Evidence Plan Process.
- 22.3.1.9 The Study Areas that will be referenced in the EIA will be refined as necessary. The Study Area for the buried archaeological resource will be restricted to an overall search area of up to 500 m from the Terrestrial Electrical Connection Cable corridor, when these details are known. The Study Area for the buried archaeological resource will be restricted to an overall search area of up to 1 km surrounding the OnSS. These Study Areas are expected to be sufficient to enable the archaeological potential of the route and OnSS location to be characterised and assessed.
- 22.3.1.10 The above Study Areas would also be used for assessing the potential indirect effects of designated heritage assets. This will capture any designated heritage assets potentially sensitive to temporary setting change associated with the installation of the Terrestrial Electrical Connection Cable corridor and will be restricted to a 500 m corridor surrounding the route. This reflects the short-term nature of setting impacts associated with the construction of the Terrestrial Electrical Connection Cable route. Whereas the 1 km Study Area surrounding the OnSS reflects the more long-term nature of setting impacts associated with the construction and operation of the substation.
- 22.3.1.11 The Study Area for assessing the Offshore Array's impacts on the setting of onshore designated heritage assets will be refined following the analysis of the ZTV of the WTGs. This Study Area will be clarified in the Scoping Response from relevant stakeholders.

22.3.1.12 In all instances, however, the search area for baseline collection/ consideration could be extended in response to stakeholder comments specifying inclusion of particular assets located at a greater distance, where necessary.



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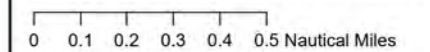
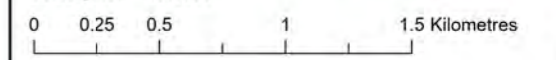
Figure 22.1
Archaeology and Cultural Heritage
Study Area

- Scoping Boundary
- Archaeology and Cultural Heritage Study Area



Coordinate System: British National Grid

Scale@A3: 1:30,000



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00	Issued for Scoping	10/10/2023

Figure 22.1 Archaeology and Cultural Heritage Study Area

Document no: 404.011945.00001.0012.0

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Checked by: JSA

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22.4 Baseline

22.4.1 Overview of baseline

22.4.1.4 For the purposes of the Scoping Report, the onshore archaeology and cultural heritage baseline refers to designated heritage assets (including Designated Monuments, Registered Buildings, and Conservation Areas) as set out in Data Sources

22.4.1.5 below. Non-designated heritage assets, provided by the IOMHER has been referred to. The results from IOMHER have been filtered to present assets of an archaeological nature. The use of this dataset in this exercise is to consider archaeological potential only, with pertinent assets only being selected for the purposes of high-level scoping.

Onshore Infrastructure

22.4.1.6 The onshore infrastructure works, for example the Terrestrial Electrical Connection Cable and OnSS have the potential to disturb buried archaeological remains and the potential to affect the significance of designated heritage assets through setting change during the construction period and operation period.

22.4.1.7 A brief overview of the designated heritage assets and pertinent non-designated heritage assets of an archaeological nature within the 'Inner Study Area 'ISA' is described below. Please note this is an indicative overview for scoping purposes only and is not exhaustive. The baseline collection in respect to any defined route would need to consider the baseline in greater detail.

Designated Assets

22.4.1.8 There are several Designated Monuments located within Douglas and the 'Inner Study Area' (see Figure 22.2). These comprise six Conservation Areas:

- Woodbourne Road;
- Windsor Road;
- Douglas Promenades;
- Selbourne Drive;
- Athol Street and Victoria Street; and
- Douglas North Quay.

22.4.1.9 There are c. 40 Registered Buildings within Douglas and the 'Inner Study Area'. Some of these buildings comprise churches, mostly of post-medieval origin but with some being of potential medieval origin. Many of the Registered Buildings also comprise residential and commercial properties.

22.4.1.10 There are no Designated Monuments within Groudle Bay and the 'Inner Study Area' (see Figure 22.3).

Non-designated Assets

22.4.1.11 There are over a hundred non-designated assets recorded in the Isle of Man Historic Environment Record (IOMHER), within Douglas and the 'Inner Study Area' (see Figure 22.2), which are summarised in this Chapter. The earliest pertinent non-designated heritage assets of an archaeological nature comprise isolated findspots of prehistoric and Roman origin. There are also several early medieval records within Douglas which attest to the early foundations of the town. Many of the recorded assets belong to the post-medieval period and are associated with the industrial and residential development of the town.

22.4.1.12 There are two non-designated assets recorded in the IOMHER, within Groudle Bay and the 'Inner Study Area' (see Figure 22.3). These appear to refer to a former post-medieval corn mill recorded in the area.

Offshore Infrastructure

22.4.1.13 There is a potential for impacts upon the setting of onshore designated heritage assets as a result of the WTGs. The potential impacts identified will be reviewed/discussed through consultee responses and during the EIA assessment. The anticipated distance between onshore heritage assets and any other offshore infrastructure, such as the Offshore Substation(s) (OSS), would likely negate the necessity for any assessment of potential impacts to designated heritage assets through setting change.

22.4.2 Data Sources

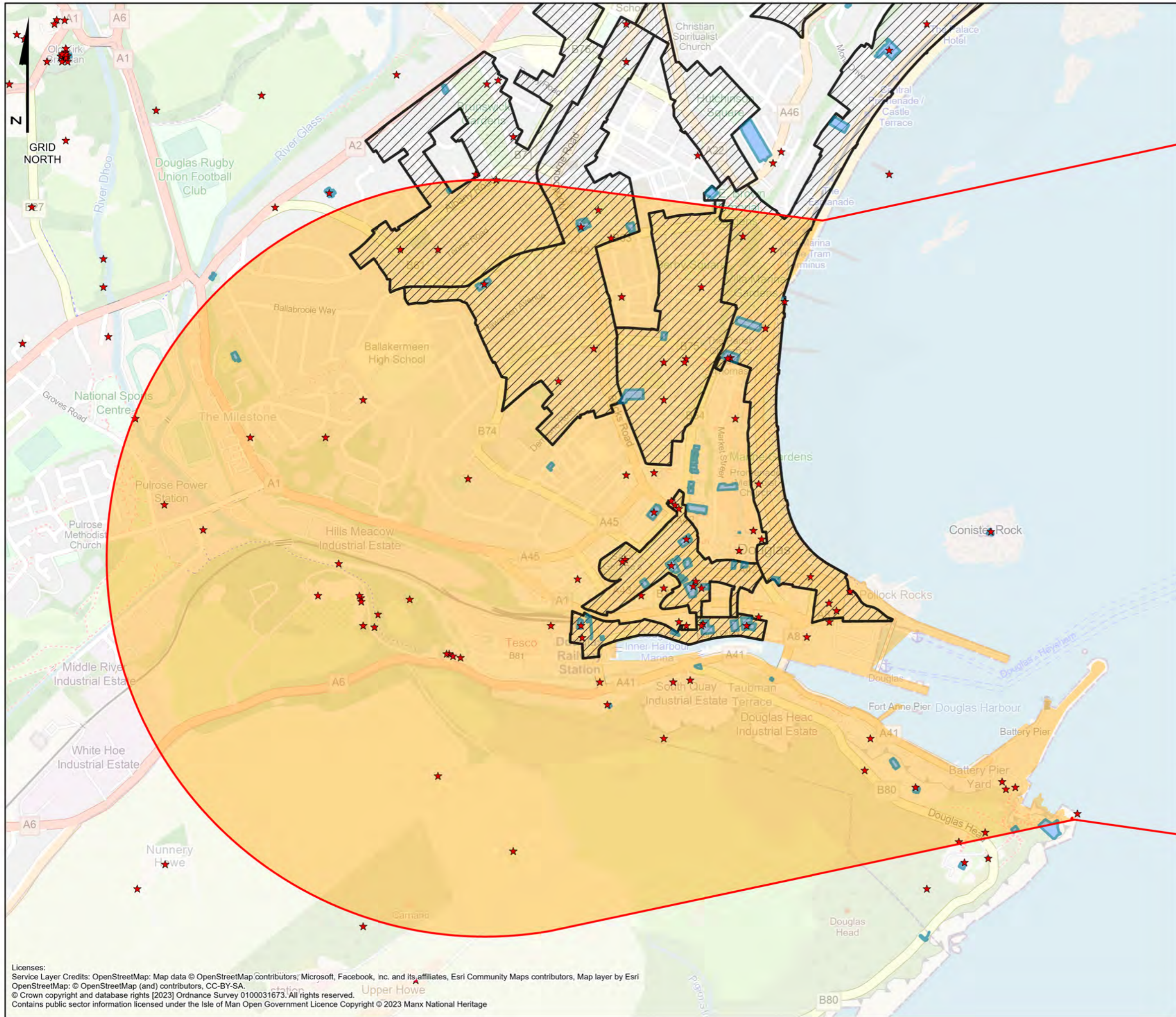
Table 22.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Isle of Man Government – Planning Map Search	Registered Buildings	South of Douglas Bay and Groudle Bay
	Conservation Areas	
Manx National Heritage	Designated Monuments	South of Douglas Bay and Groudle Bay
	Isle of Man Historic Environment Record (IOMHER)	

22.4.3 Summary of key receptors

22.4.3.4 The following receptors have been identified as the key potential sensitive onshore archaeology and cultural heritage receptors (see Figure 22.2 and Figure 22.3):

- Conservation Areas within southern extent of Douglas Bay;
- Registered Buildings within southern extent of Douglas Bay or within ZTV model; and
- Non-designated assets, i.e., archaeological remains recorded on IOMHER – those that will be located within the footprint of the Terrestrial Electrical Connection Search Area.



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Figure 20.2

Douglas Study Area

Archaeology and Cultural Heritage

- Scoping Boundary
- Archaeology and Cultural Heritage Study Area
- ★ Monument
- Registered Building
- Planning Conservation Area




Coordinate System: British National Grid
 Scale@A3: 1:10,000

0 100 200 300 400 500 Meters

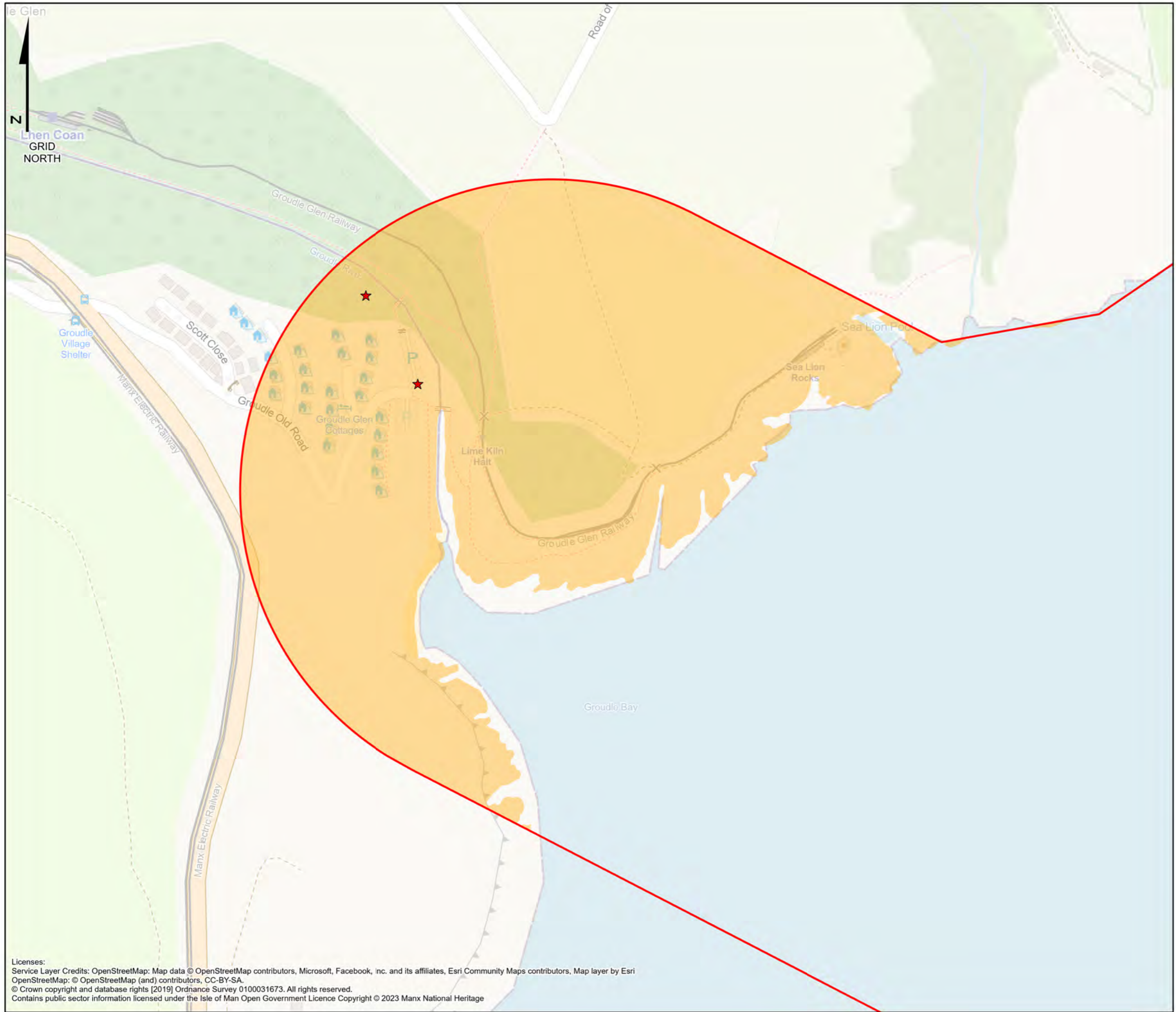
0 0.1 0.2 Nautical Miles

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Figure 20.2 Douglas Archaeology and Cultural Heritage
 Document no: 404.011945.00001.0024.0
 Created by: FGI
 Checked by: JSA
 Approved by: IFO



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Figure 22.3
Groule Bay Study Area
Archaeology and Cultural Heritage

- Scoping Boundary
- Archaeology and Cultural Heritage Study Area
- ★ Monument



Coordinate System: British National Grid
Scale@A3: 1:3,000

0 25 50 100 150 Meters

0 0.04 0.08 Nautical Miles

REV	REMARK	DATE
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Figure 22.3 Groule Bay Archaeology and Cultural Heritage
Document no: 404.011945.00001.0025.0
Created by: FGI
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Approved by: IFO



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22.4.4 Further data collection to be undertaken

22.4.4.4 Further to the high-level characterisation of the baseline within this section of the scoping report, data collection will be undertaken as part of the Historic Environment Desk-Based Assessment (HEDBA), as set out above. The datasets interrogated for the specified search areas would include:

- GIS datasets for Designated Monuments, Registered Buildings, and Conservation Areas held by Isle of Man Government;
- IOMHER for non-designated heritage assets;
- Available LiDAR data (Digital Surface Model (DSM), Digital Terrain Model (DTM) and point cloud);
- The Ordnance Survey open-source library, for topographic and cartographic data, including elevation point cloud, contour and hydrological data;
- Aerial photography/satellite imagery; and

22.4.4.5 Isle of Man Library and Archive for relevant historic mapping and documentary sources not obtainable online; and Reports relating to archaeological excavations within, and within proximity to, the Proposed Development.

22.4.5 Future baseline

22.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

22.5 Identification of impacts and effects

22.5.1 Key parameters for assessment

22.5.1.4 The onshore archaeology and cultural heritage scoping is based on the construction, operation and maintenance, and decommissioning of the following Proposed Development infrastructure:

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Isle of Man Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
- Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of 1 main building, with a max permanent and

temporary area of 6,700m². Max dimensions will be 45mx80m with a max height of 25m.

- Offshore Array area, with infrastructure comprising of:
 - WTGs – currently estimated to be up to 100 turbines, with a 320 m rotor diameter, maximum blade tip height of 389 m, and minimum blade tip height of 30 m.

22.5.2 Commitments

22.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to onshore archaeology and cultural heritage are described in Table 22.2 below.

22.5.2.5 The identified commitments are subject to further environmental assessment, scheme development and stakeholder engagement/ consultation.

Table 22.2: Relevant commitment to archaeology and cultural heritage.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co12	Designated heritage assets will be avoided by the careful routing of the Terrestrial Electrical Connection Cable corridor around sensitive locations.	Consent condition(s).	To avoid impacts to heritage assets of high significance.
Co13	Development of, and adherence to, an onshore Written Scheme of Archaeological Investigation (WSI).	Consent condition(s).	To mitigate potential impacts to heritage assets, including evaluation and monitoring in relation to archaeological works.
Co19	Development of, and adherence to, a CoCP.	Consent condition(s).	Sets out the principles for mitigation and management measures during onshore construction.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.

22.5.3 Approach to assessment of likely significant effects

- 22.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of the potential effects on onshore archaeology and cultural heritage at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.
- 22.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application, incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.
- 22.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 22.2 above and in the Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage;
 - The evidence for effects on onshore archaeology and cultural heritage resulting from the Proposed Development based on assessing the impact of the Proposed Development having regard to the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified onshore archaeology and cultural heritage lead.

22.6 Proposed approach to the EIA

- 22.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on archaeology and heritage associated with the Proposed Development that have (or do not have) the potential to result in LSE.
- 22.6.1.5 In line with the Scoping Strategy (Annex 5.C):
- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 22.7.3; and
 - **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 22.7.3.
- 22.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 22.6.1.7 For onshore archaeology and cultural heritage, the assessment of impacts will also follow specific guidance. This is further detailed within section 22.7.3 below.
- 22.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site

surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

22.7 Post Scoping

22.7.1 Overview

22.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For onshore archaeology and cultural heritage, the scoping study has identified:

- Three impacts which have the potential to result in No LSE; and
- Four impacts which have the potential to result in LSE.

22.7.2 No LSE and next steps

22.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. Further evidence will be in the form of technical Position Papers, engagement with stakeholders and if required presentation of the Position Papers at the relevant Technical Advisory Group. The proposed approach to provision of this further evidence is set out in the Stakeholder Engagement Plan.

22.7.3 LSE and next steps

Supporting studies

22.7.3.4 The onshore archaeology and cultural heritage chapter of the ES will be supported by a technical appendix prepared in accordance with guidance referenced below. The technical appendix would comprise a full Historic Environment Desk-Based Assessment (HEDBA) prepared to assess both the potential direct impact to the buried archaeological resource and potential in-direct effects as a consequence of changes within the setting of designated heritage assets.

22.7.3.5 The offshore archaeology and cultural heritage baseline report will be used to inform the terrestrial archaeology and heritage baseline report. This is due to the offshore data holding some areas of potential interest to terrestrial archaeology, for example, the prehistoric period when sea levels would have been different to modern levels.

22.7.3.6 A ZTV will be utilised in respect to the WTGs to assess potential indirect effects caused by offshore elements, albeit this would be confirmed through the professional experience of the heritage consultant and with due regard to any stakeholders who may wish to include specific assets for consideration here.

Assessment Methodology

22.7.3.7 The EIA will assess the potential LSE on onshore archaeology and cultural heritage identified in the Impacts Register (Annex 1.5B).

22.7.3.8 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology of this Scoping Report. In addition to this the methodology and approach detailed within the DMRB LA 106 Cultural Heritage Assessment will be followed for the assessment and reporting of the effects on Cultural Heritage as a result of the terrestrial elements of the Proposed Development.

22.7.3.9 In addition to this general approach, the assessment of impacts on archaeology and heritage will also follow the guidance documents listed in Table 22.2.

22.7.3.10 For onshore archaeology and cultural heritage, the Isle of Man does not currently have any guidance documents to assess impact magnitude or sensitivity of receptors. However, guidance from England will be utilised and followed.

Heritage Importance (sensitivity)

22.7.3.11 The assessment of heritage values will be primarily guided by the policies and guidance contained in 'Conservation Principles' (Historic England 2008) and 'Statements of Heritage Significance: Analysing Significance in Heritage Assets' (Historic England 2019). The values of a heritage asset will be defined with reference to the following four key forms of value:

- Evidential value;
- Historical value;
- Aesthetic value; and
- Communal value.

Magnitude of Impact

22.7.3.12 The descriptions of change set out the ways in which the values of a heritage asset may be harmed (or benefitted) by the Proposed Development. This will include the consideration of such issues as: which, and how many, elements of an asset are affected; whether the change physically modifies the asset or whether it comprises changes in visual aspects, noise or access that would alter its setting; and whether the change in the values of an asset will be adverse or beneficial.

22.7.3.13 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

22.7.3.14 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other archaeology and heritage receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

22.8 Questions to Consultees

- Question 22.1: Do you agree with the Study Areas that have been identified for archaeology and cultural heritage?;
- Question 22.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 22.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B);
- Question 22.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to archaeology and cultural heritage?;
- Question 22.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;

- Question 22.6: Are you happy for guidance from England to be followed in relation to assessing impact magnitude or sensitivity of receptors? If not, please advise on what guidance you would like to be followed;
- Question 22.7: Are you able to provide the Applicant with the GIS datasets for Designated Monuments, Registered Buildings, Conservation Areas? Can you provide them in shapefile format?;
- Question 22.8: Do you have any specific requirements for the archaeology and heritage methodology in excess of those described?; and
- Question 22.9: Are there any historic assets beyond the search areas which should be considered as part of the assessment?

23 Noise & Vibration

23.1 Introduction

- 23.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to noise and vibration from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on noise and vibration sensitive receptors.
- 23.1.1.2 This Chapter also outlines the proposed approach to understanding and characterising the baseline conditions and assessing environmental impacts through the EIA process.
- 23.1.1.3 This topic interfaces with other topics and, as such, should be considered alongside:
- Chapter 19, Onshore Ecology which further explains the likelihood of resulting effects on valued ecological features; and
 - Chapter 21, Traffic and Transport which provides detail on the scope of assessment related to traffic and transportation for the Proposed Development.

23.2 Legislation, policy and guidance

- 23.2.1.1 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 23.2.1.2 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 23.2.1.3 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to noise and vibration. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 23.2.1.4 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address

applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

- 23.2.1.5 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

23.2.2 Legislation

National legislation

- 23.2.2.1 The Isle of Man Noise Act 2006 specifies mandatory powers available to the Department in respect of any noise that either constitutes or is likely to cause a statutory nuisance. A duty is imposed on the Department to carry out inspections to identify statutory nuisances, and to serve abatement notices against these. Procedures are also specified with regards to complaints from persons affected by a statutory nuisance.
- 23.2.2.2 Section 12 of the Isle of Man Public Health Act 1990 applies to the control of noise on construction sites. This enables the Department to serve a notice to persons carrying out construction work of its requirements for the control of site noise. This may specify plant or machinery that is or is not to be used; the hours during which construction work may be carried out; the level of noise or vibration that may be emitted; and provide for changes in circumstances. Appeal procedures are available.
- 23.2.2.3 Section 13 of the Public Health Act allows those carrying out construction work to apply to the Department in advance for consent to carry out the works. This is not mandatory, but is often advantageous for the developer, as once consent is issued, the local authority is no longer able to take action under Section 12 of Public Health Act 1990 provided the works are carried out in accordance with the Section 13 consent. The Application is expected to give as much detail as possible about the works to be carried out, the methods to be used, and the measures that will be taken to minimise noise and vibration.

International legislation and agreements

- 23.2.2.4 The Control of Pollution Act (CoPA) 1974 provides local authorities in the United Kingdom with powers to control noise and vibration from construction sites.
- Section 60 of the CoPA 1974 enables a local authority to serve a notice to persons carrying out construction work of its requirements for the control of site noise. This may specify plant or machinery that is or is not to be used; the hours during which construction work may be carried out; the level of noise or vibration that may be emitted; and provide for changes in circumstances. Appeal procedures are available.
 - Section 61 of the CoPA 1974 allows for those carrying out construction work to apply to the local authority in advance for consent to carry out the works. This is not mandatory, but is often advantageous for the developer, as once consent is issued, the local authority is no longer able to take action under Section 60 of CoPA 1974 or Section 80 of the EPA 1990, provided the works are carried out in accordance with the Section 61 consent. It does not, however, prevent nuisance action under Section 82 of the EPA 1990. The Application is expected to give as much detail as possible about the works to be carried out, the methods to be used, and the measures that will be taken to minimise noise and vibration.
- 23.2.2.5 The EPA 1990 specifies mandatory powers available to local authorities in respect of any noise that either constitutes or is likely to cause a statutory nuisance, which is also defined in CoPA 1974. A duty is imposed on local authorities to carry out

inspections to identify statutory nuisances, and to serve abatement notices against these. Procedures are also specified with regards to complaints from persons affected by a statutory nuisance.

23.2.3 Policy

National policy

- 23.2.3.1 The Isle of Man Strategic Plan 2016 acknowledges the importance of protecting the environment for unacceptable levels of noise nuisance from proposed developments. Environment Policy 22 aims to prevent development which would have unacceptable impact upon current and future land uses and says *“Development will not be permitted where it would unacceptably harm the environment and/or the amenity of nearby properties in terms of [...] vibration, odour, noise or light pollution.”*

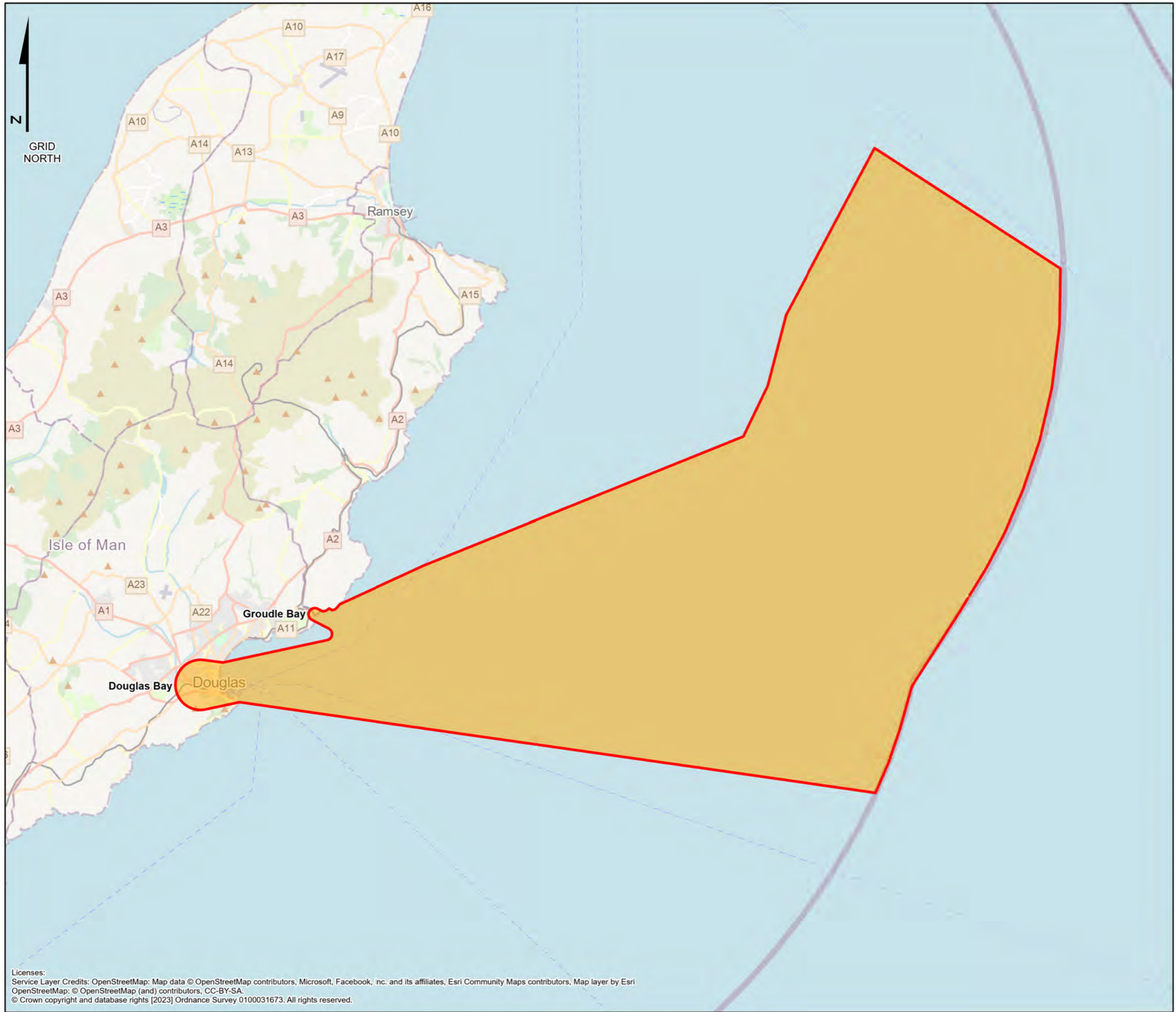
23.2.4 Guidance

International guidance

- 23.2.4.1 UK technical guidance and peer reviewed publications that have been used to define the assessment are as follows:
- British Standards Institution [BS] 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise';
 - British Standards Institution [BS] 5228-2: 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration';
 - British Standard Institution [BS] 7445-1:2003 'Description and measurement of environmental noise – Part 1: Guide to quantities and procedures';
 - British Standards Institution [BS] 6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings - Part 1: Vibration sources other than blasting';
 - Habitats Directive (2005), AQTAG09 'Guidance on the effects of industrial noise on wildlife';
 - Highways England (now National Highways) (2020), 'Design Manual for Roads and Bridges', LA 104 – Environmental assessment and monitoring;
 - Highways England (now National Highways) (2020), 'Design Manual for Roads and Bridges', LA 111 - Noise and Vibration;
 - Institute of Acoustics (IoA) (2014), 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise';
 - ISO 9613-2 'Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation';
 - Noise Policy Statement for England (NPSE) (March 2010);
 - The Institute of Environmental Management & Assessment (November 2014), ([IEMA]) 'Guidelines for Environmental Noise Impact Assessment';
 - The Working Group on Noise from Wind Turbines (1996), 'The Assessment & Rating of Noise from Wind Farms', ETSU Report for the DTI, ETSU-R-97; and
 - World Health Organisation (WHO) (2018), 'Environmental Noise Guidelines for the European Region – Guideline Values for Community Noise in Specific Environments'.

23.3 Study Area

- 23.3.1.1 This Scoping Study Area is shown in Figure 23.1, as illustrated this Chapter covers both the Onshore and Offshore elements of the Proposed Development. The Offshore Array sits wholly within the AfL area and will contain turbines, export cables, Array Cables and Offshore Substations (OSSs). The Offshore Electrical Connection Cable refers to the electrical export cable connecting the offshore array to the Electricity Grid in the Isle of Man, so contains both offshore and onshore export cables.
- 23.3.1.2 As the potential location for the landfall and terrestrial Electrical Connection Search Area is refined further as the design of the Proposed Development is progressed, the noise and vibration Study Area will be refined to include the temporary and permanent land take for all the onshore elements of the OWF, the landfall and the terrestrial electrical connection cable to the new OnSS. The closest noise and vibration sensitive receptors will then be identified, in consultation with the relevant Local Authorities and any other relevant stakeholders. At this stage of the EIA process we are unable to identify specific receptors because of the size of the Study Area.
- 23.3.1.3 The Study Area will also be reviewed and refined in response to the development of an understanding of the additional constraints affecting the terrestrial Electrical Connection Search Area (environmental and/ or engineering). This is expected to result in a significant reduction in the size of the Study Area as it is refined to more closely follow the route of the Terrestrial Electrical Connection Search Area. It will also be further refined when we know the route of the construction traffic.
- 23.3.1.4 The Offshore Array area covers approximately 253 km² within the Irish Sea. Is it wholly located within the 12 nm limit of the Isle of Man Territorial Sea and is 11 km from shore at its closest point (Maughold Head).
- 23.3.1.5 With regard to the noise and vibration Study Area for the Offshore Array, it is considered that piling operations associated with construction and operational noise from the turbines themselves would have the potential to have a noise impact on the onshore receptors; however, this would be depend on the following:
- The hammer energy of the piling rig;
 - How many turbines are being piled simultaneously;
 - The duration of the piling campaign;
 - The weather conditions, specifically the wind speed, direction and duration;
 - The operational hours of the piling operations;
 - The number, size and exact location of each of the proposed turbines (operational noise);
 - The sound power levels of the turbines; and
 - The results of the baseline sound survey at the nearest Noise Sensitive Receptors (NSR) to the landfall.
- 23.3.1.6 With reference to the above and as a conservative estimate, it is considered that the extent of the noise and vibration Study Area for the Offshore Array should be defined as a 20 km buffer zone around the array.



Moor Vannin

Figure 23.1
Noise and Vibration Study Area

- Scoping Boundary
- Noise and Vibration Study Area



Coordinate System: British National Grid
 Scale@A3: 1:150,000

0 2 4 6 8 Kilometres

0 1 2 3 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	11/10/2023

Figure 23.1 Noise and Vibration Study Area
 Document no: 404.011945.00001.0023.0
 Created by: FGI
 Checked by: JSA
 Approved by: IFO



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23.4 Baseline

23.4.1 Overview of baseline

- 23.4.1.1 No baseline sound monitoring has been undertaken to date. Once the noise and vibration Study Area has been refined, a review of the Proposed Development information will identify the overall Study Area for noise and vibration, leading to the identification of the relevant consultee(s).
- 23.4.1.2 Consultation and engagement will be undertaken (but only with prior permission) with the relevant consultee(s) (e.g. the Environmental Health Unit) to determine their views and requirements for the assessment. It is intended that, through this process, agreement will be reached regarding the closest potential receptors and the survey methodology.

23.4.2 Data sources

- 23.4.2.4 It has been determined that no existing baseline sound data is available for the Study Area; therefore section 23.4.4 describes the further baseline sound data to be collected.

23.4.3 Summary of key receptors

- 23.4.3.1 Once the Study Area has been refined the noise and vibration assessment will consider the following receptors identified within the Study Area:
- Residential dwellings;
 - Commercial uses e.g. offices;
 - Industrial uses/properties e.g. factories;
 - Education establishments e.g. schools;
 - Buildings for medical use e.g. hospitals
 - Places of worship and
 - Ecologically sensitive sites.

23.4.4 Further baseline data collection to be undertaken

Long-term and Short-term Surveys

- 23.4.4.4 Long-term and short-term baseline surveys will be undertaken at the identified NSR's applicable to each assessment. The measured noise data will be used to derive ambient and background sound levels for both daytime and night-time periods where applicable for use in the relevant construction and operational noise assessments. The surveys and data screening will be in accordance with the requirements of BS 7445:1991.
- 23.4.4.5 The surveys relevant to each assessment are described in more detail below.

Baseline Sound Surveys – Construction Noise

- 23.4.4.6 Long-term baseline sound measurements consisting of continuous unattended measurements lasting at least 96-hours in duration (including a weekend) would be undertaken at up to four receptors around the landfall location to determine baseline sound levels at the nearest NSRs to the coast and to set construction noise limits for landfall and offshore construction operations.
- 23.4.4.7 Monitoring would be undertaken at up to four additional receptors located further inland (within 500 m of the landfall), as these may have lower baselines being further away from coastal winds and the noise of the sea itself. Both coastal and inland

baseline sound levels would be utilised to set limits for offshore construction operations (piling) where considered necessary.

23.4.4.8 Long-term measurements would also be taken at any NSRs identified at Maughold Head as these receptors are located closest to the Offshore Array. These baseline sound levels would be utilised to set limits for offshore construction operations (piling) where considered necessary.

23.4.4.9 Short-term measurements would also be undertaken along the Terrestrial Electrical Connection Cable, these measurements would consist of a minimum of a one-hour fully attended survey at each of the identified NSRs along the route, assuming a maximum length of the Terrestrial Electrical Connection Cable of 15 km at up to four locations per day for four days. These baseline levels would be utilised to set limits for daytime construction operations at the NSRs located adjacent to the route of the Terrestrial Electrical Connection Cable.

Baseline Sound Surveys – Operational Noise

23.4.4.10 Long-term noise measurements consisting of continuous unattended measurements lasting at least 96-hours in duration (including a weekend) would be undertaken at up to four receptors around the OnSS location to determine baseline sound levels at the nearest NSRs. These levels would be utilised as the basis of the operational noise assessment in conjunction with BS4142:2014+A1:2019.

23.4.4.11 It is also envisaged that these levels would be utilised to set construction noise limits at the identified NSRs for the construction of the OnSS.

23.4.5 Future Baseline

23.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

23.5 Identification of impacts and effects

23.5.1 Key parameters for assessment

23.5.1.4 Scoping for the noise and vibration assessment is based on the construction, operation and maintenance and decommissioning of the following infrastructure comprising the Proposed Development:

- Offshore Array: a maximum number of 105 offshore foundation positions (positions may be a turbine foundation or substation foundation) with a maximum of 100 wind turbine generators (WTGs), electrical connection cables, Array Cables and OSSs;
- Landfall: this contains the Transition Joint Bays (TJBs) and Jointing Bays (JBs). These are underground concrete structures that house the joint between the offshore and Terrestrial Electrical Connection Cables (TJB specific) and the joint between sections of the Terrestrial Electrical Connection Cables (JB specific). The number of TJBs is three (one per circuit);
- Terrestrial Electrical Connection Cables: this contains all Onshore Infrastructure and associated works between landfall and the Moir Vannin Grid Connection (Terrestrial Electrical Connection Cables). This includes the construction of a Substation and installation of 3 x 3 single core cables (3 per HVAC circuit). The

permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m; and

- Construction and operation of an OnSS: housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. The OnSS will consist of 1 main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.

23.5.1.5 For further details on these elements, see Chapter 3, Project Description.

23.5.2 Commitments

23.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to noise and vibration are described in Table 23.1 below.

Table 23.1: Relevant commitments to noise and vibration.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent Condition	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co11	Non-Road Mobile Machinery (NRMM) equipment controls and best practice techniques will be followed.	Consent Condition	To ensure emissions from NRMM do not result in significant adverse effects on local air quality during construction.
Co17	Development and implementation of a CEMP.	Consent Condition	Sets out onshore mitigation measures during onshore construction, including details of the timings of onshore works.
Co19	Development of, and adherence to, a CoCP.	Consent Condition	Sets out the principles for mitigation and management measures during onshore construction.
Co46	Burial of onshore cable joint bays, with the land above reinstated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent Condition	To minimise land take while ensuring access at ground level can be maintained.
Co48	Core working hours for the onshore components will be 07:00 to 19:00 Monday to Friday, and 08:00 to 13:00 on Saturdays, except for specific circumstances where longer working hours are required as set	Consent Condition	To reduce the overall impact and disruption to people outside working hours.

ID	Measure proposed	How this measure will be secured	Rationale
	out in the CoCP unless otherwise notified by the Applicant.		

23.5.3 Approach to assessment of likely significant effects

- 23.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on noise and vibration at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to the EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.
- 23.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application, incorporating changes as a result of the iterative design process and responses to consultation and engagement via scoping and the Evidence Plan Process.
- 23.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:
- Commitments identified in Table 23.1 above and in the Commitments Register (Annex 3.A);
 - The level of understanding of the baseline environment at this stage i.e. the majority of the receptors would be in an urban coastal environment with varied background noise levels.;
 - The evidence for effects on noise and vibration based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
 - Professional judgement of the qualified noise and vibration lead.

23.6 Proposed approach to the EIA

- 23.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on noise and vibration associated with the Proposed Development that have (or do not have) the potential to result in LSE.
- 23.6.1.5 In line with the Scoping Strategy (Annex 5.C):
- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 23.7.2; and
 - **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 23.7.3.
- 23.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

- 23.6.1.7 For noise and vibration, the assessment of impacts will also follow specific guidance. This is further detailed within section 23.7.3 below.
- 23.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

23.7 Post-scoping

23.7.1 Overview

- 23.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For noise and vibration, the scoping study has identified:
- Two impacts which have the potential to result in No LSE; and
 - Ten impacts which have the potential to result in LSE.

23.7.2 No LSE and next steps

- 23.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. The additional evidence is likely to include technical position papers; consultation with statutory stakeholders and if required representation at Technical Advisory Groups.

23.7.3 LSE and next steps

Supporting Studies

- 23.7.3.4 Impacts that have the potential to result in LSE will be carried through for detailed assessment within the Environmental Statement at the point of application. Section 23.6 sets out the proposed approach to assessment in relation to these impacts.

Assessment Methodology

- 23.7.3.5 The EIA will assess the potential impacts on noise and vibration identified in the Impacts Register (Annex 5.B).
- 23.7.3.6 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 23.7.3.7 The EIA will assess the potential impacts resulting from noise and vibration identified in the Impacts Register (Annex 5.B). The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology.
- 23.7.3.8 For noise and vibration during the construction phase, impact magnitude will be determined upon existing residential receptors will be determined with reference to BS 5228:2009+A1:2014, Part 1: Noise and Part 2 Vibration.
- 23.7.3.9 For construction traffic noise, impact magnitude will be determined with reference to the classification of magnitude of impacts used in short-term traffic noise assessments presented in the DMRB, 2020.
- 23.7.3.10 For the prediction of noise from the operation of the Offshore Array, further reference would be made to Section 2.2 of the Institute of Acoustics (I.o.A) document '*The Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise*' (GPG).

- 23.7.3.11 For the prediction of operational noise from the OnSS assessment would follow BS 4142:2014+A1:2019.
- 23.7.3.12 The assessment of construction and operational noise on Ecological receptors would make reference to the external AQTAG09 (Air Quality Technical Advisory Group 09) guidance.
- 23.7.3.13 The assessments reference above are described in more detail in section 23.7.4.
- 23.7.3.14 The assessment will be conducted in accordance with DMRB LA 104 Environmental assessment and monitoring, produced by Highways England version 1, and published in August 2020.
- 23.7.3.15 The guidelines address assessment of environmental effects, reporting of assessments and monitoring of significant adverse environmental effects, including noise and vibration impacts. Further advice and guidance will be utilised from the Guidelines for Environmental Noise Impact Assessment, produced by IEMA, version 1.2, and published in November 2014. In combination the DMRB and IEMA guidelines provide specific support on how noise impact assessments fit within the EIA process. They cover:
 - How to scope a noise assessment;
 - Issues to be considered when defining the baseline noise environment;
 - Prediction of changes in noise levels as a result of implementing development proposals; and
 - Definition and evaluation of the significance of the effect of changes in noise levels.
- 23.7.3.16 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 23.7.3.17 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other noise and vibration receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

Sensitivity of Receptors

- 23.7.3.18 The Sensitivity of noise and vibration receptors will be defined as per Table 23.2. The sensitivity of the receptor is a major consideration within the assessment and will be used to inform the significance of effect.
- 23.7.3.19 With reference to Table 3.2N from the DMRB LA 104, which relates to receptor sensitivity, it does not define topic-specific criteria therefore these have been defined for noise and vibration specifically within Table 23.2.

Table 23.2: Sensitivity of the environment.

Receptor Sensitivity/Importance	Description/Reason
High	Residential properties (night-time), schools and healthcare buildings (daytime).
Medium	Residential properties (daytime), leisure facilities. Designated Ecological Sites such as Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Sites of Special Scientific Interest (SSSI).

Receptor Sensitivity/Importance	Description/Reason
Low	Offices and other non-noise producing employment areas.
Negligible	Industrial areas.

Magnitude of Impact

23.7.3.20 The overall magnitude of impact will be defined as per Table 3.4N from the DMRB LA104 and replicated in Table 23.3. It is considered that there would be no beneficial impacts with regards to noise and vibration in association with the Proposed Development, therefore beneficial impacts have been omitted from Table 23.3. The impact magnitude categories outlined below will be used to inform the significance of effect.

Table 23.3: Overall impact magnitude definitions.

Magnitude of impact (change)	Description/Reason
Major	Adverse Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
Moderate	Adverse Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
Minor	Adverse Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
Negligible	Adverse Very minor loss or detrimental alteration to one or more characteristics, features or elements.
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

23.7.3.21 The methodologies utilised for the construction and operational assessments are described below, including how the magnitude of impact is defined for each assessment.

23.7.4 Construction Noise

23.7.4.4 Guidance relevant to the effects of noise and vibration during construction and decommissioning is provided by BS 5228:2009+A1:2014. This standard is published in two parts: Part 1 - Noise and Part 2 - Vibration. The points below relate mainly to Part 1, however, the recommendations of Part 2 in terms of vibration are broadly very similar. The guidance:

- Refers to the need for the protection against noise and vibration of persons living and working in the vicinity of, and those working on construction and open sites;
- Recommends procedures for noise and vibration control in respect of construction operations;
- Stresses the importance of community relations, and states that early establishment and maintenance of these relations throughout site operations will go some way towards allaying any concerns;

- Provides recommendations regarding the supervision, planning, preparation and execution of works, emphasising the need to consider noise at every stage of the operation;
- Describes methods of controlling noise at source and its spread; and
- Includes a discussion of noise control targets, and example criteria for the assessment of the significance of noise effects.

23.7.4.5 With regards to construction noise the impact upon existing residential receptors will be determined with reference to the ABC method presented in BS5228-1:2009+A1:2014. The impact magnitude of construction noise upon existing residential receptors is detailed in Table 23.4.

Table 23.4: Construction Noise Impact Magnitude.

Impact Magnitude	Exceedance in the L_{Aeq} Noise Level
Major	Threshold value exceeded by 5 dB or more.
Moderate	Threshold value exceeded by a maximum of 4 dB.
Minor	Threshold value exceeded by a maximum of 2 dB.
Negligible/No change	Threshold value not exceeded.

23.7.5 Construction road traffic noise

23.7.5.4 Construction related traffic using the local road network will be assessed accordance with the DMRB. The assessment undertaken includes all roads where it is anticipated that noise levels may change from construction traffic.

23.7.5.5 For each link, the Basic Noise Level (BNL) has been established for the “With Construction Traffic” and “Without Construction Traffic” scenarios. The BNL is the $L_{A10, TdB}$ noise level at 10 m from the kerb of the road assessed.

23.7.5.6 The BNL results for each link have been tabulated and the impact and significance would be determined.

23.7.5.7 It is noted that DMRB has since been superseded by LA 111 – Noise and Vibration; however, as the calculations associated with the assessment with the assessment contained within LA 111 is identical to the one contained within DMRB, this method remains valid.

23.7.5.8 With reference to the above the impact magnitude of construction road traffic noise upon existing residential receptors is detailed in Table 23.5 below.

Table 23.5: Construction Traffic Noise Impact Magnitude.

Impact Magnitude	Description
Major	Change in $L_{A10, 18hr}$ noise level of 5 dB or more
Moderate	Change in $L_{A10, 18hr}$ noise level between 3.0 and 4.9 dB
Minor	Change in $L_{A10, 18hr}$ noise level of 0.1 and 2.9 dB
Negligible/No change	No change in $L_{A10, 18hr}$ noise level

23.7.6 Construction vibration

- 23.7.6.4 Consideration will be given to all potential sources of vibration associated with the construction phase particularly those in proximity to residential NSRs.
- 23.7.6.5 Guidance on assessing the human response to vibration in buildings is found in BS 6472:2008. For construction vibration from sources other than blasting, the vibration level and effects will be adopted based on Table B-1 of BS 5228-2:2009+A1:2014. These levels and effects are based on human perception of vibration in residential environments. With reference to the above the impact magnitude of construction vibration upon existing residential receptors is detailed in Table 23.6 below.

Table 23.6 Construction Vibration Impact Magnitude.

Impact Magnitude	Predicted PPV Level mms^{-1}
Major	10.0 mms^{-1} or more
Moderate	Between 1.0 to 9.9 mms^{-1}
Minor	Between 0.3 to 0.9 mms^{-1}
Negligible/No change	Between 0.01 and 0.3 mms^{-1}

23.7.7 Operational noise

Offshore Array

- 23.7.7.4 Operational sound associated with the OWF on all identified NSRs will be assessed. Although ETSU-R-97 is the recognised guidance for the assessment of onshore wind farms on residential NSRs, is not intended for assessment of noise from OWFs. However, the guidance provided in ETSU-R-97 and the Institute of Acoustics (IoA) Good Practice Guide (GPG) may be relevant for establishing background noise levels and for the derivation of daytime and night-time noise limits or for the simplified (< 35 dBA) assessment at the identified NSRs.
- 23.7.7.5 Derived noise limits will be implemented for the assessment of impacts. Additionally, it is suggested that the specific sound level of the source be assessed against the limits stated in the World Health Organisation (WHO) Environmental Noise Guidelines for the European Region – Guideline Values for Community Noise in Specific Environments for sleep disturbance inside bedrooms during the night-time hours. Consultation and engagement with the relevant local authorities will be required in order to agree the methodology to be implemented for the assessment of operational noise from the OWF.
- 23.7.7.6 With reference to the above the impact magnitude operational noise from the Offshore Array on existing residential receptors is detailed in Table 23.7 below.

Table 23.7: Operational Noise from the offshore array impact magnitude.

Impact Magnitude	Exceedance in the 35dB LAeq Noise Limit
Major	Limit value exceeded by 5 dB or more
Moderate	Limit value exceeded by a maximum of 4 dB or more
Minor	Limit value exceeded by a maximum of 2 dB
Negligible/No change	Limit value not exceeded

Onshore Substation

- 23.7.7.7 Operational sound associated with the onshore substation, will be assessed in accordance with BS 4142:2014+A1:2019. This standard is intended to be used to assess the potential adverse impact of sound, of an industrial and/or commercial nature, at nearby sensitive receptor locations within the context of the existing sound environment.
- 23.7.7.8 The assessment of impacts contained in BS 4142:2014+A1:2019 is undertaken by comparing the sound rating level, i.e. the specific sound level of the source plus any penalties, to the measured representative background sound level immediately outside the sensitive receptor location. Consideration is then given to the context of the existing sound environment at the sensitive receptor location to assess the potential impact.
- 23.7.7.9 With reference to the above the impact magnitude operational noise from the OnSS on existing residential receptors is detailed in Table 23.8 below.

Table 23.8: Operational Noise from the OnSS Impact Magnitude.

Impact Magnitude	Exceedance in the 35dB L _{Aeq} Noise Limit
Major	Rating level is 10 dB(A) or more above the background sound level, or change in ambient noise level (L _{Aeq}) of 10 dB or more.
Moderate	Rating level is between 6 and 9 dB(A) above the background sound level, or change in ambient noise level (L _{Aeq}) of between 6 and 9 dB.
Minor	Rating level is between 1 and 5 dB(A) above the background sound level, or change in ambient noise level (L _{Aeq}) of between 1 and 5 dB.
Negligible/No change	Rating level is equal to or below the background sound level, or no change in ambient noise level (L _{Aeq}).

23.7.8 Ecological receptors

- 23.7.8.1 For ecological receptors including habitats, protected and notable species and invasive non-native species, the assessment of noise effects during construction and operation will make reference to the external AQTAG09, guidance on the effects of industrial noise on wildlife, which is intended to be used to assess the potential adverse impact of sound of an industrial and/ or commercial nature on wildlife.
- 23.7.8.2 With reference to the above the impact magnitude from construction and operational noise on existing ecological receptors is detailed in Table 23.9 overleaf.

Table 23.9: Construction and Operational Noise on Ecological Receptors Impact Magnitude.

Impact Magnitude	Exceedance in the AQTAG L _{Aeq} Noise Limit
Major	Limit value exceeded by 5 dB or more.
Moderate	Limit value exceeded by a maximum of 4 dB.
Minor	Limit value exceeded by a maximum of 2 dB.
Negligible/No change	Limit value not exceeded.

- 23.7.8.3 For further information on the ecological receptors, see Chapter 19, Onshore Ecology.

23.7.9 Significance of Effect

- 23.7.9.1 The Sensitivity of the receptor and the magnitude of impact will then be considered collectively to determine the potential effect and its significance. The collective assessment will represent a 'considered assessment' by the assessor, based on the likely sensitivity of the receptor to the change (e.g. is a receptor present which would be affected by the change), and then the magnitude of that change.
- 23.7.9.2 The matrix included in Table 23.10 will be used as a guide to determine the level of effect; major and moderate effects are considered to be 'significant' in terms of the EIA Regulations.

Table 23.10: Matrix to Determine Effect Significance.

		Magnitude			
		Major	Moderate	Minor	Negligible/No change
Sensitivity of Receptor	High	Large or very large	Moderate or large	Slight or moderate	Neutral or slight
	Medium	Moderate or large	Moderate	Slight	Neutral or slight
	Low	Slight or moderate	Slight	Neutral or slight	Neutral or slight
	Negligible	Slight	Neutral or slight	Neutral or slight	Neutral

23.7.10 Mitigation and ES Format

- 23.7.10.1 Where appropriate, specific mitigation measures will be detailed to mitigate identified adverse impacts on health and quality of life from noise and vibration and, if possible, will be designed to contribute to improvements in the above.
- 23.7.10.2 The final noise and vibration chapter for the ES will contain the final results of the construction, operational, decommissioning and cumulative noise and vibration assessments. This stage would also include completion of a non-technical summary, and submission of technical appendices and supporting figures. The final chapter for the ES will also contain the identified mitigation proposals and strategies (where these have been identified).

23.8 Questions to Consultees

- Question 23.1: Do you agree with the Study Area that has been identified for noise and vibration?;
- Question 23.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 23.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 23.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to noise and vibration?; and
- Question 23.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

24 Air Quality

24.1 Introduction

- 24.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to air quality from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on air quality receptors.
- 24.1.1.2 The Proposed Development has the potential to interact with the receiving environment, particularly during the construction phase. Principal air quality constraints relate to construction dust and road traffic emissions associated with onshore construction activities.
- 24.1.1.3 This topic interfaces with other topics and as such, should be considered alongside:
- Chapter 21, Traffic & Transport which provides the scope of assessment for the traffic and transportation onshore elements of the Proposed Development.

24.2 Legislation, policy and guidance

- 24.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 24.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 24.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to air quality. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 24.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

24.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

24.2.2 Legislation

National legislation

24.2.2.4 The Public Health Act 1990 provides the legislative framework for the implementation of Air Quality Standards across the Isle of Man. Where these standards are exceeded, appropriate action should be taken to achieve compliance. This may involve prosecution, if an individual/ occupier is found to significantly contribute to exceedances and remedial action is not taken. The Public Health Act 1990 also regulates activities that may result in emissions of air pollutants. Details of activities (e.g., location, duration, extent of substances etc.) should be submitted to the Isle of Man Government for authorisation, including the steps proposed to be taken to reduce or mitigate potential effects.

24.2.3 Policy

National policy

24.2.3.4 The Isle of Man Strategic Plan 2016 provides the guiding principles for development and land-use across the Isle of Man. Environment Policy 22 relates to pollution and states that development will not be permitted where it will generate emissions of airborne pollutants that may unacceptably harm the environment and/ or amenity of nearby properties. Due consideration should be given to all design elements to ensure interactions with the receiving environment are understood and mitigated.

International policy

24.2.3.5 From review of the latest annual monitoring report (Isle of Man Government, 2009), the Isle of Man Government adopts the Air Quality Standards governing ambient air prescribed within the 2000 Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Department for Environment, Food and Rural Affairs (DEFRA) *et al.*, 2000). From review of available information, recent updates to the Air Quality Strategy have not been adopted by the Isle of Man Government. This includes the 2023 Air Quality Strategy (DEFRA, 2023). This will be confirmed with relevant stakeholders.

24.2.4 Guidance

International guidance

24.2.4.4 UK guidance documents have been used in lieu of domestic guidance. These documents relate to established best practice for the assessment of air quality within the development control process. This includes the following:

- Highways England, Transport Scotland, Welsh Government and Department for Infrastructure: DMRB LA 105 (Highways England *et al.*, 2019);
- Institute of Air Quality Management (IAQM): Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2016); and
- DEFRA and Devolved Administrations: Local Air Quality Management (LAQM) Technical Guidance 22 (LAQM.TG(22)) (DEFRA, 2022).

24.3 Study Area

24.3.1.4 The Study Area has been defined in relation to each assessment proposed, respectively, as detailed below.

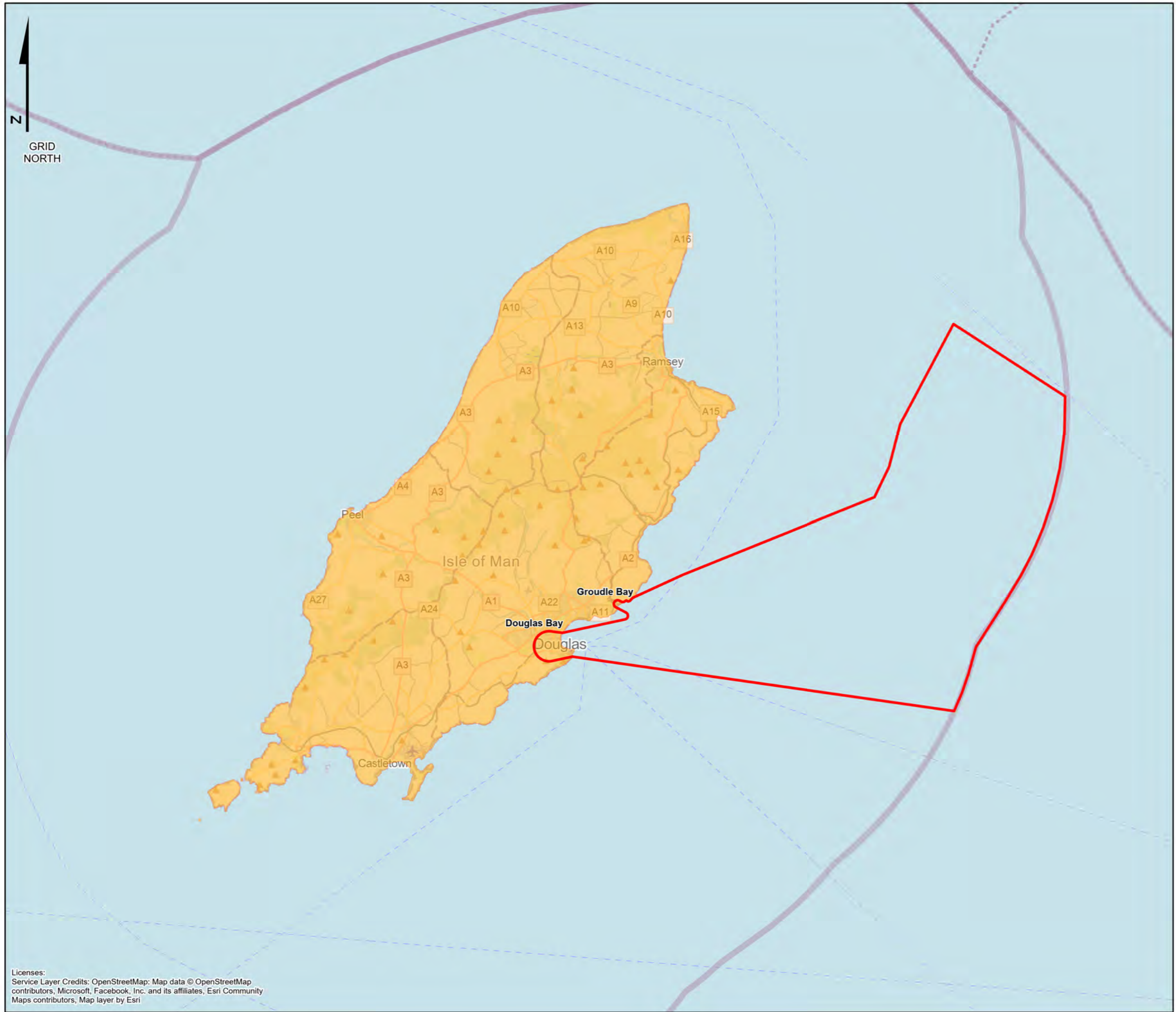
- 24.3.1.5 We cannot geographically define our Study Area at this stage, as it is dependent on detailed project data (e.g. dust activities, transport data), see Figure 24.1.
- 24.3.1.6 Data is not available for Scoping - so we are unable to geographically define our Study Area at this stage. It will be defined at a more appropriate stage whilst undertaking the assessment (Pre-application/ES).
- 24.3.1.7 For Scoping, typical practice for Air Quality Chapters is to state your approach to gain agreement. This is response to data limitations.
- 24.3.1.8 The Study Area will be reviewed throughout the EIA lifecycle, upon refinement of the onshore working areas, following identification of environmental/ engineering constraints and/ or feedback from consultees.

24.3.2 Construction Dust Assessment

- 24.3.2.4 For the purposes of defining the onshore Study Area in relation to dust/ particulate matter (PM) generated from the construction of the proposed onshore infrastructure on sensitive receptor locations, guidance provided by the IAQM (IAQM, 2016) will be used. This involves the consideration of:
- Human receptors within 350 m of any proposed onshore construction works, and within 50 m of routes used by construction vehicles on the public highway, up to 500 m from site exits; and
 - Ecological receptors within 50 m of any proposed onshore construction works, and within 50 m of routes used by construction vehicles on the public highway, up to 500 m from site exits.

24.3.3 Construction Road Traffic Screening Assessment

- 24.3.3.4 For the purposes of defining the onshore Study Area in relation to road traffic emissions generated by onshore construction activities, the DMRB LA 105 (Highways England *et al.*, 2019) will be used.
- 24.3.3.5 Human and ecological receptors within 200 m of roads which are expected to experience increases in traffic flows (and pollutant emissions) associated with the construction of the proposed onshore infrastructure will be assessed, where necessary.
- 24.3.3.6 If an ecological and/ or human receptor is located more than 200 m from an affected road link, further consideration is not required.



GRID
 NORTH

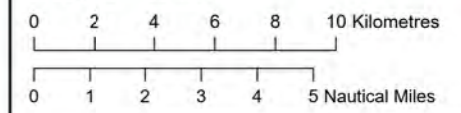
Moor Vannin

Figure 24.1
Air Quality Study Area

- Scoping Boundary
- Air Quality Study Area



Coordinate System: British National Grid
Scale@A3: 1:250,000



REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

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Figure 24.1 Air Quality Study Area
Document no: 404.011945.00001.0036.0
Created by: FGI
Checked by: JSA
Approved by: IFO



24.4 Baseline

24.4.1 Overview of baseline

- 24.4.1.4 The characterisation of the existing onshore environment will be undertaken using monitored data reported by the Isle of Man Government. Further detail is provided in Table 24.1. The Isle of Man monitoring data will be requested from the appropriate statutory consultee as part of the Evidence Plan Process, the data will be reviewed with consultees and agree the approach to be undertaken.
- 24.4.1.5 No project specific air quality surveys are proposed presently as it is assumed that baseline air quality data as recorded by the Isle of Man Government will be sufficient for the purposes of characterising the onshore receiving environment. This is also considered proportionate to the nature of the proposed screening assessment.
- 24.4.1.6 However, the suitability of these publicly available datasets will be reviewed and confirmed with relevant stakeholders, throughout the design phase, and upon identification of relevant sensitive receptors to determine if supplementary surveys are required.
- 24.4.1.7 At the assessment stage, upon receipt of project data (e.g. distribution of traffic movements), we will geographically define the Study Area. Once defined, we will review the suitability and coverage of the Isle of Man monitoring network to determine if further surveys are required.

24.4.2 Data Sources

- 24.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 24.1.

Table 24.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Isle of Man Government	Air quality monitoring network comprising automatic and diffusion tube techniques reporting data for nitrogen dioxide (NO ₂), oxides of nitrogen (NO _x), sulphur dioxide (SO ₂), carbon monoxide (CO), particulate matter (PM) and ozone. Automatic monitoring ceased in 2009. Diffusion tube monitoring is used to monitor NO ₂ concentrations over a monthly period. Since 2018, additional monitoring locations have been established in and adjacent to Douglas, which was further expanded in 2022.	National coverage (to be determined)

24.4.3 Summary of key receptors

- 24.4.3.4 The air quality assessment will consider human and ecological receptors, where relevant. Examples of Human receptors includes sensitive land use, including educational and medical facilities and residential units.
- 24.4.3.5 Ecological receptors will comprise terrestrial protected sites with sensitive qualifying features. Examples of these include (but are not limited to):
- Areas of Special Scientific Interest;
 - National Nature Reserves;
 - Areas of Special Protection for Birds; and
 - RAMSAR Wetland of International Importance.

24.4.3.6 Identification of receptors will be undertaken for each assessment, in accordance with prevailing guidance and in consultation with relevant stakeholders and the wider project team (e.g., ecology). An illustration of the surrounding designated sites is provided in Chapter 32, Protected Sites Assessment Strategy.

24.4.4 Further data collection to be undertaken

24.4.4.4 All assessment techniques proposed to be undertaken to inform the EIA will be desk-based. This will include traffic data, based upon analysis undertaken and presented as part of the Traffic and Transport Chapter.

24.4.4.5 Furthermore, as discussed in section 24.4.1, publicly available data will be used to characterise the baseline environment. This is considered proportionate to the nature of the proposed screening assessment.

24.4.5 Future baseline

24.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

24.5 Identification of impacts and effects

24.5.1 Key parameters for assessment

24.5.1.4 The Air Quality scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and Terrestrial Electrical Connection Cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Moir Vannin Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuits and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
- Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45 m x 80 m with a max height of 25m.

24.5.1.5 A full description of the Proposed Development infrastructure is provided in Chapter 3, Project Description.

24.5.1.6 The MDS will be defined individually for each assessment and agreed with relevant stakeholders.

24.5.1.7 The MDS will consider all design scenarios and reflect the worst-case design inputs. Use of the MDS will provide greater confidence in the assessment outcomes and ensure all potential scenarios and associated impacts have been assessed. The MDS

for air quality will comprise the maximum design parameters/ extents of proposed Onshore Infrastructure associated with all proposed construction scenarios.

24.5.2 Commitments

24.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to air quality are described in Table 24.2 below.

Table 24.2: Relevant commitment to air quality.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co10	Adherence to dust control measures and best practice techniques.	Consent condition(s).	To minimise effects associated with the generation of dust on sensitive receptors during onshore construction.
Co11	Non-Road Mobile Machinery (NRMM) equipment controls and best practice techniques will be followed.	Consent condition(s).	To ensure emissions from NRMM do not result in significant adverse effects on local air quality during construction.
Co17	Development and implementation of a CEMP.	Consent condition(s).	Sets out onshore mitigation measures during onshore construction, including details of the timings of onshore works.
Co19	Development of, and adherence to, a CoCP.	Consent condition(s).	Sets out the principles for mitigation and management measures during onshore construction.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.

24.5.3 Approach to assessment of likely significant effects

24.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on air quality at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

24.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result

of the iterative design process and responses to consultation via scoping and the Evidence Plan.

24.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 24.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on air quality based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified air quality lead.

24.5.3.7 Based on this, impacts that have the potential to result in LSE will be considered in detail at the assessment stage. Section 24.7.3 sets out the proposed approach to assessment in relation to these impacts. The following impacts have been identified as having the potential to result in LSE, and will be considered in detail at the assessment stage:

- Construction Dust: Effects associated with dust/ PM generated from temporary onshore construction activities upon sensitive human and ecological receptors; and
- Construction Road Traffic Emissions: Public health and ecological effects associated with a temporary change in pollutant concentrations arising from construction generated traffic flows.

24.6 Proposed approach to the EIA

24.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on air quality associated with the Proposed Development that have (or do not have) the potential to result in LSE.

24.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 24.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 24.7.3.

24.6.1.6 The approach to EIA and characterisation of impacts will follow specific guidance prepared for the consideration of air quality impacts within the development control process. This represents established best practice. This is further detailed within section 24.7.3 below.

24.6.1.7 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progresses; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

24.7 Post-scoping

24.7.1 Overview

24.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For air quality, the scoping study has identified:

- Seven impacts which have the potential to result in No LSE; and
- Two impacts which have the potential to result in LSE.

24.7.2 No LSE and next steps

24.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. This will comprise a technical note referencing design data for the Proposed Development and scientific literature. Stakeholders will have the opportunity to review these conclusions and provide feedback as part of the Evidence Plan Process. The proposed approach to provision of this further evidence is set out in the Stakeholder Engagement Plan.

24.7.3 LSE and next steps

Supporting studies

24.7.3.4 No supporting studies are currently proposed.

Assessment Methodology

24.7.3.5 The EIA will assess the potential impacts on air quality identified in the Impacts Register (Annex 5.B).

24.7.3.6 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

24.7.3.7 In addition to this general approach, the assessment of impacts on air quality will also follow guidance documents listed in section 24.2.4 that are specific to this topic.

24.7.3.8 Whilst Chapter 5, EIA Methodology provides an overarching EIA assessment matrix; it also identifies that assessment methodologies will reflect the prevailing technical area guidance employed for each discipline. As such the following sections provide a description of the assessment criteria and assessment methodologies that are proposed to be used to assess air quality. These are derived from best practice guidance documents.

24.7.3.9 Potential air quality impacts arising from dust generated from onshore construction activities will be assessed qualitatively in accordance with IAQM guidance (IAQM, 2016).

24.7.3.10 The IAQM construction dust assessment methodology provides a framework to establish the unmitigated risk of construction dust impacts associated with construction activities at both human and ecological receptors. This risk is based on a relationship between the anticipated dust emission magnitude and the sensitivity of the surrounding area, defined with use of criteria provided within the IAQM construction guidance.

24.7.3.11 The likely unmitigated dust emission magnitude associated with four activities (demolition, earthworks, construction and trackout) is initially defined and used in conjunction with the sensitivity of the surrounding area to determine the risk of impact for each activity. These sensitivities are:

- Dust soiling effects on people and property;
- The risk of human health effects due to an increase in exposure to PM; and
- Ecological impacts.

- 24.7.3.12 Following determination of these risks, proportionate commitments will be recommended, with the aim of rendering residual effects as not significant in terms of the EIA regulations. These controls will be included within the CoCP to secure their effective implementation (Table 24.2).
- 24.7.3.13 For the assessment of road traffic emissions, an initial screening exercise will be conducted. This will comprise the consideration of projected road traffic volumes generated by onshore construction activities on the public road network. The outcomes of this assessment will determine whether impacts at human and ecological receptors can be considered insignificant, or whether further detailed assessment is required.
- 24.7.3.14 Screening thresholds prescribed within the LA 105 guidance document (Highways England *et al.*, 2019) will be used, and are as follows:
- A change of total vehicle movements of more than 1,000 annual average daily traffic (AADT); and/ or
 - A change of heavy-duty vehicle (HDV) flows of more than 200 AADT.
- 24.7.3.15 As per section 24.3.3, affected road links within 200 m of a sensitive qualifying receptor will be considered.
- 24.7.3.16 Traffic data used to inform the assessment will be consistent with the analysis undertaken and presented as part of Chapter 21, Traffic & Transport.
- 24.7.3.17 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other air quality receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.
- 24.7.3.18 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other marine users receptors, in accordance with the methodology set out in Chapter 5, EIA Methodology, respectively.

24.8 Questions to Consultees

- Question 24.1: Do you agree with the Study Area that has been identified for air quality?;
- Question 2.42: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 24.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 24.4 Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to air quality?;
- Question 24.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?; and
- Question 24.6: Do you have any specific requirements for the assessment methodology?

25 Hydrology, Hydrogeology & Flood Risk

25.1 Introduction

- 25.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to hydrology, hydrogeology and flood risk, from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on hydrological receptors.
- 25.1.1.2 The water environment includes onshore surface watercourses, onshore surface water drainage and groundwater waterbodies. Offshore aspects of the water environment are considered separately in Chapter 8, Marine Water & Sediment Quality.
- 25.1.1.3 This Chapter should be read alongside the following onshore and offshore assessment sections of this Scoping Report:
- Chapter 7, Marine Geology, Oceanography & Physical Processes, which considers the changes to coastal processes that have the potential to impact benthic subtidal and intertidal ecology receptors directly or indirectly;
 - Chapter 8, Marine Water & Sediment Quality, which considers the likelihood of resulting effects on marine water and sediment quality receptors;
 - Chapter 19, Onshore Ecology, which identifies ecological designations, considered to be sensitive land uses; and
 - Chapter 20, Land Use & Ground Conditions, which considers the likelihood of resulting effects on land use and ground conditions receptors.

25.2 Legislation, policy and guidance

- 25.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 25.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 25.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to hydrology, hydrogeology and flood risk. Where there is no, or limited, Manx

legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

25.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

25.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

25.2.2 Legislation

National Legislation

25.2.2.4 The Water Pollution Act 1993 was implemented to make provision for the protection of inland and coastal waters from pollution; to control deposits in the sea; and for connected purposes.

25.2.2.5 The Implementing Coastal Water EQS Policy (EPU/03/2020) provides measures to assist the regulation of The Water Pollution Act 1993 Part 1 further to enactment of the Water Pollution (Objectives & Standards) Scheme 2020. The water quality objective is to achieve 'Good' or 'Pass' classification for all inland waters. For sites where 'Good' cannot be achieved the Department will consider a realistic objective taking into account economic and environmental pressures. For coastal waters the Department's objective is to 'Pass' the Environmental Quality Standards (EQS) specified in Schedule 3 Part 1 of the Scheme. For discharges where the EQS cannot be achieved the Department will take into account the economic and environmental pressures with achieving the standard.

International legislation and agreements

25.2.2.6 The Water Framework Directive (WFD) (2000/60/EC) provides the foundation for the protection of the water environment in the EU. The WFD seeks to protect all elements of the water cycle and to enhance the quality of groundwater, surface waters, estuaries, and coastal waters. The Directive is transposed and implemented in the UK through the Water Environment (WFD) (England and Wales) Regulations 2017. Chapter 8, Marine Water & Sediment Quality also makes reference to the WFD in relation to assessment of the offshore water environment.

25.2.2.7 The Groundwater Directive (2006/118/EC, including amendments to Annex II detailed under Directive 2014/80/EU) (the GWD) is designed to combat groundwater pollution and sets out procedures for assessing quality of groundwater. Aspects of the GWD are transposed and implemented through the Water Environment (WFD) (England and Wales) Regulations 2017 and the Environmental Permitting (England and Wales) Regulations 2016.

25.2.2.8 The Floods Directive (2007/60/EC) requires assessment of all watercourses and coastlines to determine risk of flooding and action to take adequate and coordinated measures to reduce this flood risk. The Flood Risk Regulations 2009 transpose the EU Floods Directive into law in England and Wales.

25.2.3 Policy

National policy

25.2.3.4 Relevant policies from the Isle of Man Strategic Plan 2016 with regard to hydrology, hydrogeology and flood risk are:

- General Policy 2: Development which is in accordance with the land-use zoning and proposals in the appropriate Area Plan and with other policies of this Strategic Plan will normally be permitted, provided that the development (amongst other matters):

- does not prejudice the use or development of adjoining land in accordance with the appropriate Area Plan; and
- is not on contaminated land or subject to unreasonable risk of erosion or flooding.
- Environment Policy 10: Where development is proposed on any site where in the opinion of the Department of Local Government and the Environment there is a potential risk of flooding, a flood risk assessment and details of proposed mitigation measures must accompany any application for planning permission. The requirements for a flood risk assessment are set out within Appendix 4 of the Isle of Man Strategic Plan.
- Environment Policy 11: Coastal development will only be permitted where it would not:
 - increase or transfer the risk of flooding or coastal erosion through its impact on natural coastal processes;
 - prejudice the capacity of the coast to form a natural sea defence; and
 - increase the need for additional coast protection works except where necessary to protect existing investment or development.
- Environment Policy 12: New coastal defence works must not have an unacceptable impact on the character, appearance, ecology, archaeology, or natural processes of the coastal environment.
- Environment Policy 13: Development which would result in an unacceptable risk from flooding either on or off-site, will not be permitted.

25.2.3.5 The Development and Flood Risk Guidance for the Isle of Man Draft PPS, issued by the Department of Local Government and the Environment under section 3 of the Town and Country Planning Act 1999, specifies the manner in which the Department intends to deal with planning applications for development which may be subject to flood risk, or which may increase the risk of flooding on other land.

25.2.3.6 National Strategy on Sea Defences, Flooding and Coastal Erosion: Evidence Report, June 2016 provides assessment of both flooding and coastal erosion in the Isle of Man.

25.2.4 Guidance

International guidance

25.2.4.4 UK guidance documents have been used in lieu of domestic guidance. These documents relate to established best practice for the assessment of hydrology within the development control process. This includes the following:

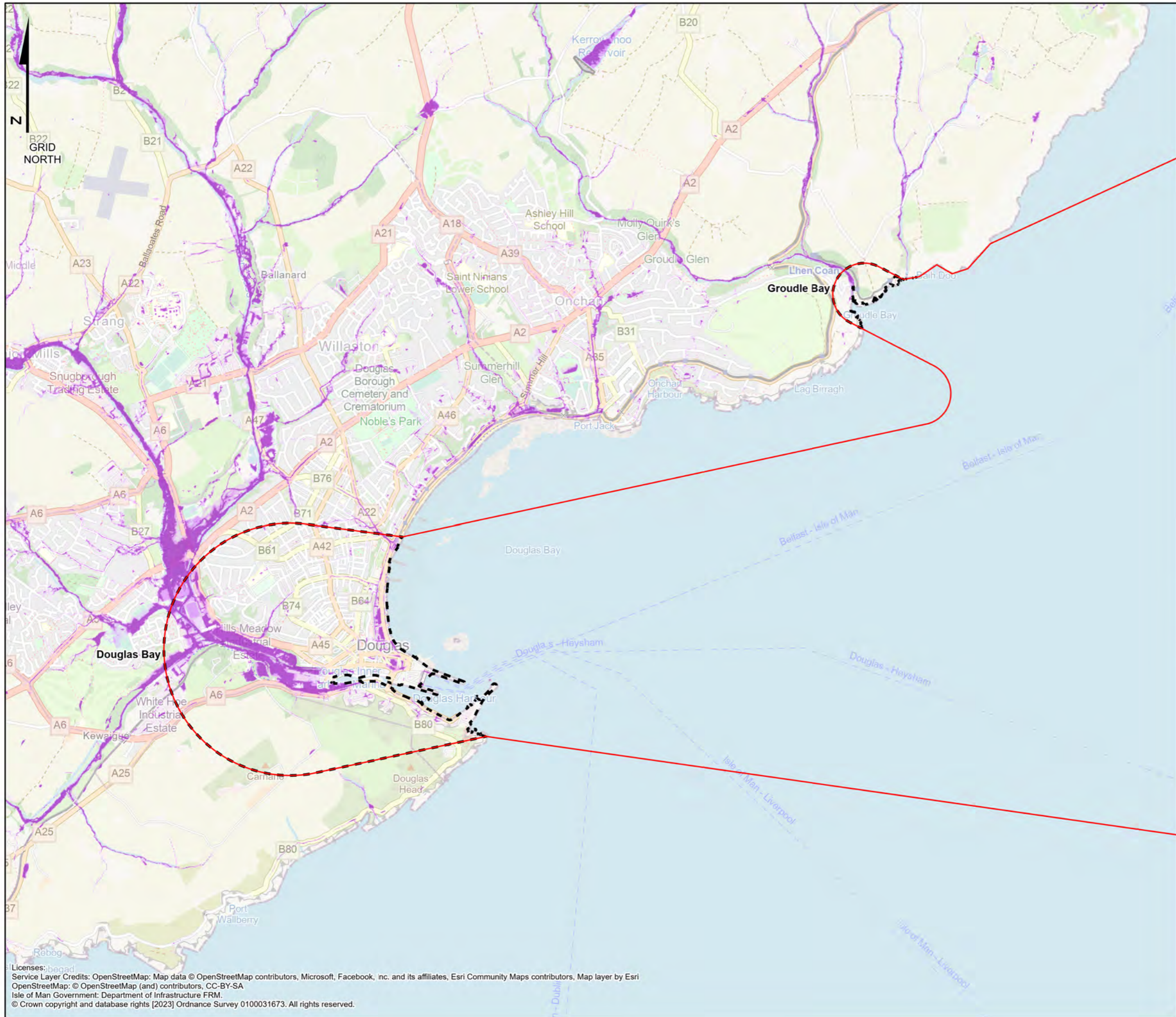
- Control of Water Pollution from Construction Sites (C532), Construction Industry Research and Information Association, (CIRIA) 2001;
- Environmental Good Practice on Site (C741), CIRIA 2015;
- Control of water pollution from linear construction projects, CIRIA 2006; and
- The SuDS Manual (C753), CIRIA 2015.

25.3 Study Area

25.3.1.4 The Study Area for this hydrology, hydrogeology and flood risk chapter includes land onshore from MLW within the scoping boundary, and is defined based on the Study Area shown in Figure 25.1 and Figure 25.2 For the purpose of scoping, the whole of the Study Area has been taken into consideration. Areas outside, but with

potential hydraulic connectivity to the Study Area, have also been taken into consideration up to a distance of 2 km.

- 25.3.1.5 The landfall location of the cable(s) is proposed to be within the Study Area on Figure 25.1 and Figure 25.2, with two options for landfall at either Douglas or Groudle Bay. Should landfall be made at Douglas the Terrestrial Electrical Connection Cable will travel inland towards the onshore substation (OnSS). It is not proposed that the Terrestrial Electrical Connection Cable will travel towards the OnSS if landfall is made at Groudle Bay. The proposal is for landfall only at Groudle Bay and connection to an OnSS is outside the scope of the Proposed Development (see Chapter 3, Project Description) and would be subject to a separate consent.
- 25.3.1.6 The Study Area will be refined and amended for future stages of the planning process following identification of constraints and the selection of routing for the Terrestrial Electrical Connection Cable, as well as feedback received within the Scoping Opinion. This is expected to result in a reduction in the size of the Study Area as it is refined to more closely follow the route of a preferred cable corridor, location for landfall and substation connection point.



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Figure 25.2
Surface Water Flood Risk

- Scoping Boundary
- Hydrology Study Area
- Surface Water - High Likelihood
- Surface Water - Low Likelihood
- Surface Water - Medium Likelihood



Coordinate System: British National Grid

Scale@A3: 1:30,000

0 0.25 0.5 1 1.5 Kilometres

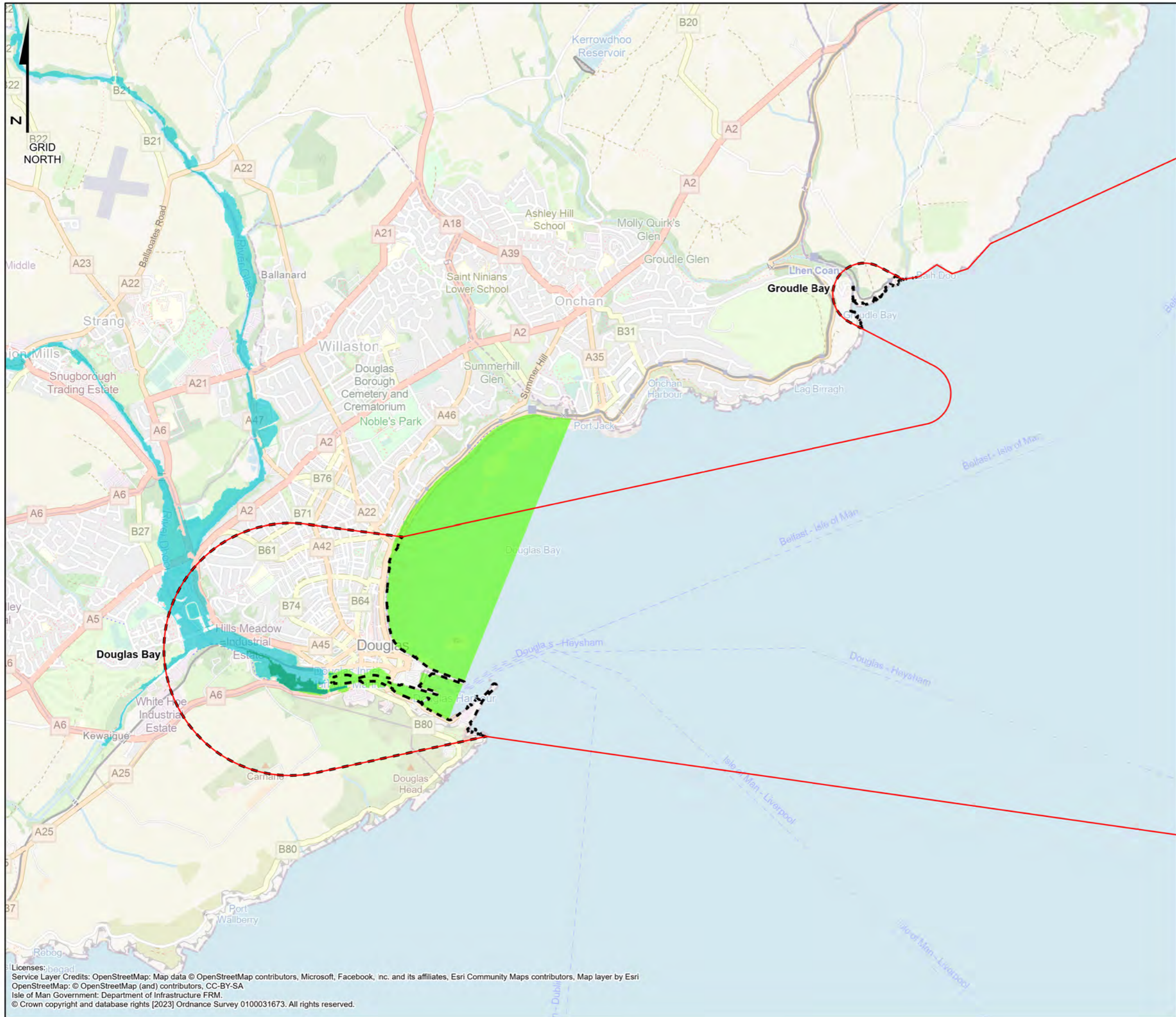
0 0.25 0.5 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

Figure 25.2 Surface Water Flood Risk
Document no: 404.011945.00001.0015.0
Created by: FGI
Checked by: JSA
Approved by: IFO



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Moor Vannin

Figure 25.1
Tidal and Fluvial Flood Risk

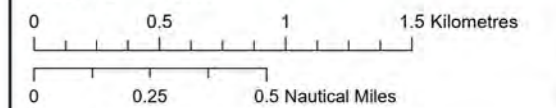
- Scoping Boundary
- Hydrology Study Area
- High Risk Flood Zones (River And Tidal)
- High Risk Flood Zones (Tidal)
- High Risk Flood Zones (River)

Note:
Main rivers have been analysed for High Risk Flood Zones (River)



Coordinate System: British National Grid

Scale@A3: 1:30,000



REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

Figure 25.1 Tidal and Fluvial Flood Risk
Document no: 404.011945.00001.0014.0
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25.4 Baseline

25.4.1 Overview of baseline

25.4.1.4 Baseline data to inform scoping for hydrology, hydrogeology and flood risk has been taken from publicly available information and opensource data from a range of sources. The key sources of information are summarised in Table 25.1. An initial desk-based review of the Study Area has been undertaken to establish the baseline water environment.

Douglas Bay

25.4.1.5 Land within the Study Area at Douglas Bay is drained by the River Glass, and its tributary Middle River. Fluvial and tidal flood risk mapping shows some of the Study Area (mainly following the channel of the River Glass) is within an area at high risk of flooding from rivers and tidal sources, taking into account the impacts of climate change.

25.4.1.6 Surface water flood risk mapping indicates some areas of land in the Study Area are at potential risk of inundation from extreme rainfall.

25.4.1.7 The Study Area at Douglas Bay is underlain by Lonan Formation (mudstone, siltstone and sandstone), which is overlain by superficial deposits of the Sulby Glen Formation (sand and gravel), Snaefell Formation (diamicton), and Marine Beach Deposits (sand). The underlying geology within the Study Area is likely to have groundwater present.

Groudle Bay

25.4.1.8 Land within the Study Area at Groudle Bay is drained by Groudle River. Fluvial and tidal flood risk mapping shows the Study Area at Groudle bay is not within an area at risk of flooding from rivers and tidal sources.

25.4.1.9 Surface water flood risk mapping indicates some areas of land in the Study Area are at potential risk of inundation from extreme rainfall.

25.4.1.10 The Study Area at Groudle Bay is underlain by the Sandton Member (sandstone), which is overlain by superficial deposits of the Snaefell Formation (diamicton). The underlying geology within the Study Area is likely to have groundwater present.

Designated Areas

25.4.1.11 The statutory environmentally designated sites within the Study Area or within areas close to and in hydraulic continuity with the Study Area are listed below:

- Douglas Bay Marine Nature Reserve (MNR);
- Little Ness (MNR);
- Douglas North Quay Conservation Area (CA);
- Douglas Promenades CA;
- Athol St Victoria St CA;
- Douglas Head and Marine Drive Designated Wildlife Site;
- Douglas Head Area of Special Scientific Interest (ASSI);
- Marine Drive ASSI;
- The Nunnery and Lower Douglas River Designated Wildlife Site;
- Douglas River Confluence Designated Wildlife Site;
- Port-e-Chee Glass River Designated Wildlife Site;

- Middle River Designated Wildlife Site;
- Kirby Park Designated Wildlife Site
- Farmhill Woodlands Designated Wildlife Site;
- Groudle Glen Designated Wildlife Site; and
- Onchan Head Designated Wildlife Site.

25.4.2 Data sources

25.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 25.1.

Table 25.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Isle of Man Flood Hub (Dol)	Flood risk mapping from rivers, the sea and surface water.	Full coverage of the hydrology, hydrogeology and flood risk Study Area.
Mann GIS Island Environment (DEFA)	Statutory and non-statutory environmental designations.	Full coverage of the hydrology, hydrogeology and flood risk Study Area.
River Monitoring Report (2018 – 2022) (Environmental Protection Unit, DEFA, Isle of Man Government)	Water quality monitoring data.	Full coverage of rivers within the hydrology, hydrogeology and flood risk Study Area (River Glass, River Dhoo and Middle River).
British Geological Society (BGS) Mapping	Geology (artificial ground, superficial deposits, bedrock); borehole/ well data; aquifer designation and groundwater vulnerability.	Full coverage of the hydrology, hydrogeology and flood risk Study Area.

25.4.3 Summary of key receptors

25.4.3.4 The hydrology, hydrogeology and flood risk assessment will consider the potential impacts on the following key receptors:

- Watercourses;
- Fluvial and tidal zone areas;
- Statutory and non-statutory environmental designations; and
- Groundwater/ aquifers.

25.4.4 Further data collection to be undertaken

25.4.4.4 Further evidence is proposed to be gathered via targeted data requests and consultation with a number of stakeholders and regulatory bodies as part of the Evidence Plan Process. Information and data to be requested will include:

- Flood modelling and mapping, flood defence asset information and flood event history;
- Surface water quality and groundwater quality data;
- Coastal management and shoreline monitoring data; and

- Licensed abstractions or registered private water supplies.

25.4.5 Future baseline

25.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

25.5 Identification of impacts and effects

25.5.1 Key parameters for assessment

25.5.1.4 The hydrology, hydrogeology and flood risk scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and Terrestrial Electrical Connection Cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Onshore Substation (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
- Offshore Electrical Connection Search Area and the Offshore Array: this will contain all offshore infrastructure and associated works. It should be noted that offshore parameters related to human health are also considered in other chapters: see Chapter 8, Marine Water & Sediment Quality, Chapter 23, Noise & Vibration and Chapter 24, Air Quality).
- Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45 m x 80 m with a max height of 25m.

25.5.1.5 A full description of the Proposed Development infrastructure is provided in Chapter 3, Project Description.

25.5.2 Commitments

25.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to hydrology, hydrogeology and flood risk are described in Table 25.2 below.

Table 25.2: Relevant commitments to hydrology, hydrogeology and flood risk.

ID	Commitment proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co17	Development and implementation of a CEMP.	Consent condition(s).	Sets out onshore mitigation measures during onshore construction, including details of the timings of onshore works.
Co19	Development of, and adherence to, a CoCP.	Consent condition(s).	Sets out the principles for mitigation and management measures during onshore construction.
Co20	Avoidance, where practicable, of identified areas of contaminated land, sensitive areas, carbon-rich land and designated areas onshore.	Consent condition(s).	To minimise the impacts of the onshore infrastructure on areas sensitive to the hydrological environment.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.

25.5.3 Approach to assessment and likely significant effects

25.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on hydrology, hydrogeology and flood risk at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

25.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.

25.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Embedded mitigation and commitments identified in Table 25.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on hydrology, hydrogeology and flood risk based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and

- Professional judgement of the qualified hydrology, hydrogeology and flood risk lead.

25.6 Proposed approach to the EIA

25.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on hydrology, hydrogeology and flood risk associated with the Proposed Development that have (or do not have) the potential to result in LSE.

25.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 25.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 25.7.3.

25.6.1.6 For hydrology, hydrogeology and flood risk, the assessment of impacts will also follow specific guidance. This is further detailed within section 25.7.3 below.

25.6.1.7 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progresses; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

25.7 Post-scoping

25.7.1 Overview

25.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For hydrology, hydrogeology and flood risk, the scoping study has identified:

- Thirteen impacts which have the potential to result in No LSE; and
- No impacts which have the potential to result in LSE.

25.7.2 No LSE and next steps

25.7.2.4 Thirteen impacts for hydrology, hydrogeology and flood risk have been identified as having no potential for LSE at this stage. Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process in the form of technical papers and it is anticipated that these papers will be provided to the relevant Technical Advisory Group (TAG).

25.7.2.5 A detailed assessment of the existing baseline environment, and a Flood Risk Assessment (FRA) in relation to hydrology, hydrogeology and flood risk will be undertaken. The FRA will incorporate the proposed commitments which are relevant to hydrology, hydrogeology and flood risk and the means for securing them, as identified in the Commitments Register (Annex 3.A). FRA reporting will be undertaken as required for the Terrestrial Electrical Connection Cable Route and substation elements of the design and presented in the FRA.

25.7.2.6 Full engagement with stakeholders will be sought in order to confirm aspects of the baseline environment and potentially sensitive receptors in relation to hydrology, hydrogeology and flood risk.

25.7.3 LSE and next steps

Supporting studies

25.7.3.4 No further supporting studies are proposed to support LSE.

Assessment Methodology

25.7.3.5 The EIA will assess the potential impacts on hydrology, hydrogeology and flood risk identified in the Impacts Register (Annex 5.B).

25.7.3.6 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

25.7.3.7 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology. In addition to this general approach, the assessment of impacts on hydrology, hydrogeology and flood risk will also follow the following guidance documents where they are specific to this topic. There are no detailed guidance documents for Isle of Man in relation to assessing impacts on hydrology, hydrogeology and flood risk, therefore the following guidance documents used in England/ mainland UK will be referred to, as advised within the Isle of Man Strategic Plan 2016.

25.7.3.8 Regard will be given to technical guidance and other codes of best practice during the design phase of the Project in order to limit:

- The potential for contamination of groundwater and surface waters;
- The potential for flooding to be caused to the existing water environment and surrounding sensitive users;
- Potential for change to groundwater or surface water hydrology; and
- Other potential impacts on the water environment.

25.7.3.9 Relevant UK guidance on good practice for construction projects that will be referenced during assessment is detailed in the following documents:

- Control of Water Pollution from Construction Sites (C532) (CIRIA 2001);
- Environmental Good Practice on Site (C741), CIRIA 2015;
- Control of water pollution from linear construction projects, CIRIA 2006; and
- The SuDS Manual (C753), CIRIA 2015.

25.7.3.10 There are no published guidelines or criteria for assessing and evaluating effects on hydrology, hydrogeology or flood Risk within the context of an EIA. The proposed assessment will be based on a methodology outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018).

25.7.3.11 This approach provides a mechanism for identifying the areas where site specific commitments will be required and for identifying commitment measures appropriate to the risk presented by the Proposed Development. This approach also allows effort to be focused on reducing risk where the greatest benefit may result.

25.7.3.12 The approach to assessment and data gathering would be agreed through liaison with relevant bodies prior to commencement and consultation will be undertaken at key stages throughout the EIA process.

25.7.3.13 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

25.7.3.14 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other hydrological receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

25.8 Questions to Consultees

- Question 25.1: Do you agree with the Study Area that has been identified for hydrology, hydrogeology and flood risk?;
- Question 25.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 25.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 25.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to hydrology, hydrogeology and flood risk?;
- Question 25.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 25.6: Do you agree that the commitments described provide a suitable means for managing and mitigating the potential effects of the onshore elements of the Proposed Development on hydrology, hydrogeology, and flood risk for onshore receptors?; and
- Question 25.7: Do you have any specific requirements for the hydrology, hydrogeology and flood risk methodology in excess of those described?

26 Landscape & Visual Impact Assessment (LVIA)

26.4 Introduction

26.4.1.4 This Chapter of the Scoping Report identifies the potential impacts of relevance to landscape and visual amenity from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on landscape and visual receptors.

26.4.1.5 This Chapter includes consideration of potential effects on receptors within the Isle of Man and provides an overview of the existing environment and context for the Study Area, followed by identification of the Likely Significant Effects which have the potential to occur as a result of the construction, operation (including maintenance), and decommissioning of the Proposed Development. This Chapter focuses on the potential effects of the Proposed Development's onshore infrastructure which includes the onshore substation, onshore electrical connection cable and landfall (above MLW).

26.4.1.6 The Chapter has links with, and should therefore be read alongside:

- Chapter 15, Seascape, Landscape & Visual Impact Assessment, which considers the seascape, landscape and visual impacts of the offshore infrastructure of the Proposed Development that is below MHW.

26.5 Legislation, policy and guidance

26.5.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:

- Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.

26.5.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

26.5.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to LVIA. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

26.5.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address

applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.

26.5.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

26.5.2 Policy

National policy

- The Isle of Man Strategic Plan (Isle of Man Government, 2016) provides national landscape policy which designates 'Areas of High Landscape or Coastal Value and Scenic Significance' (AHLVs). This designation is equivalent in levels of protection to Areas of Outstanding Natural Beauty, National Parks or Heritage Coasts within the UK. Environmental Policy 2 states that, within AHLVs, "*the protection of the character of the landscape will be the most important consideration*". The Island Spatial Strategy Key Diagram (p29) shows that this designation covers the island's coastline; St John's, Greeba Valley and Crosby; and several National Glens: Sulby Glen, Glen Auldyn, Laxey Glen, and East and West Baldwin.

26.5.3 Guidance

International guidance

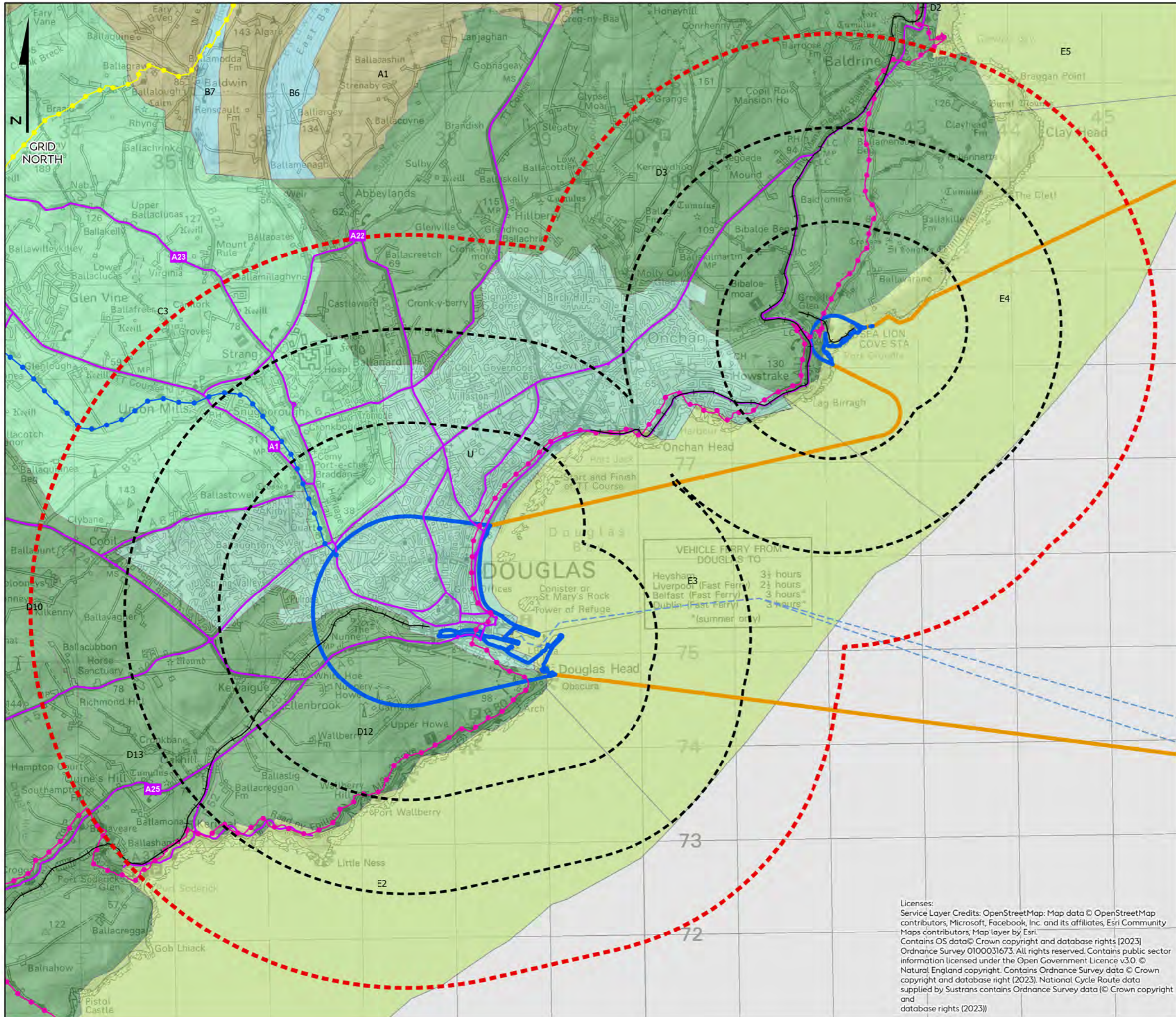
- The primary source of LVIA guidance is the 'Guidelines for Landscape and Visual Impact Assessment. Third edition' (Landscape Institute with the Institute of Environmental Management and Assessment, 2013), hereafter 'GLVIA3'. Further relevant guidance concerns the definition of Study Areas, Zones of Theoretical Visibility (ZTVs) and preparation of visualisations for wind farm development (NatureScot, 2017a); assessment of landscape value outside national designations (Landscape Institute, 2021); assessment of effects on the Special Qualities of National Scenic Areas (NatureScot, 2018a); coastal character assessment (NatureScot, 2018b); and additional guidance for onshore wind farms, that may also be relevant to offshore wind farm siting and design (NatureScot, 2017b); and cumulative assessment (NatureScot, 2021).

26.6 Study Area

26.6.1.4 The LVIA Study Area will be defined in relation to the footprint of the Proposed Development's onshore infrastructure. For the purposes of this Scoping Report, the maximum extent of the LVIA Study Area has been defined as a 3 km radius around the Terrestrial Electrical Connection Search Area. The LVIA Study Area is shown on Figure 26.1 and is considered to cover the maximum potential area within which significant effects may occur as a result of the onshore infrastructure.

26.6.1.5 The Study Area will be narrowed down for the purpose of the LVIA as the EIA and Proposed Development's design progresses, informed by identification of the onshore substation's ZTV, once defined location for this infrastructure has been established.

26.6.1.6 The LVIA Study Area includes landscape receptors lying above mean sea level and visual receptors (people) located within these terrestrial areas, with potential visibility of the Proposed Development. A reasonable Maximum Design Scenario for the extent of the cable routing works and the onshore substation will be agreed with the Isle of Man Government for the purpose of the assessment as it progresses.



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Figure 26.1: Maximum Extent of LVIA Study Area and Landscape Character with Key Visual Receptors

- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- 1km Radii
- 3km LVIA Study Area
- Primary and A Road
- Railway Track
- Ferry Route
- Isle of Man Long Distance Walking Route
 - Heritage Trail
 - Millennium Way
 - Raad Ny Foillan (Isle of Man Coastal Path)
- Isle of Man Landscape Character Types
 - A. Uplands
 - B. Narrow Upland Glens
 - C. Broad Lowland Valley
 - D. Incised Slopes
 - E. Rugged Coast
 - U. Urban



Coordinate System: ETRS 1989 UTM Zone 30N

Scale@A3: 1:40,000

0 0.4 0.8 1.6 Kilometers

0 0.28 0.55 1.1 Nautical Miles

REV	REMARK	DATE
1	First issue	05/10/2023

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Figure 26.1: Maximum Extent of LVIA Study Area and Landscape Character with Key Visual Receptors
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 Approved by: SM

26.7 Baseline

26.7.1 Overview of baseline

- 26.7.1.4 In line with the EIA Regulations, the *"current state of the environment (baseline scenario) and an outline of the likely evolution thereof"* (the future baseline) will be included within the EIA Report.
- 26.7.1.5 The LVIA Study Area primarily comprises the settlements of Douglas, Onchan and Baldrine; areas of the adjoining rural landscape; and the coastline from Garwick Bay to Port Soderick.

Landscape Character

- 26.7.1.6 Landscape Character Type (LCT) descriptions within the 'Isle of Man Landscape Character Assessment' (Chris Blandford Associates, 2008) will form the basis of the baseline landscape character description of the LVIA Study Area and the assessment of the visual aspects of perceived character resulting from the Proposed Development within the EIA Report.

Landscape Planning Designations

- 26.7.1.7 Areas within the LVIA Study Area have been attributed a landscape planning designation and some of these include Areas of High Landscape Value (AHLVs), defined by the Isle of Man Strategic Plan 2016, which encompass much of the coastline and two broad inland areas. Many of the island's 18 National Glens lie on the coast and/or within AHLVs.

Visual Baseline

- 26.7.1.8 The principal visual receptors in the LVIA Study Area are likely to be found within the areas closest to the Proposed Development. These include people within Douglas, Onchan and Baldrine; visiting tourist facilities or historic environment assets; engaged in recreational activity, such as walking or cycling; and driving on roads. An assessment will be undertaken in the EIA Report for those visual receptors that are most susceptible to visual changes arising from the Proposed Development and which may experience significant visual effects due to it.

26.7.2 Data sources

- 26.7.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 26.1.

Table 26.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Chris Blandford Associates (2008), 'Isle of Man Landscape Character Assessment'.	Provides an island-wide assessment of landscape character to inform land use planning and landscape management decisions, including the four Area Plans produced for the Island as a whole.	Isle of Man
Isle of Man Government (2016), 'Isle of Man Strategic Plan 2016'	Identifies an maps Areas of High Landscape Value and Scenic Sensitivity which are protected by planning policy.	Isle of Man
Isle of Man Government (2023), 'Isle of Man Transport'.	Information about the Isle of Man's transport network, timetables, routes and fares. Includes heritage railways.	Isle of Man

Source	Summary	Coverage of the Study Area
Isle of Man Government (2023) 'National Glens'.	Identifies glens preserved and maintained in a semi-natural state by the Forestry, Amenity and Lands Division of DEFA which are freely accessible.	Isle of Man
Scott, K.E. et al. (2005), 'An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms' Scottish Natural Heritage Commissioned Report No.103 (ROAME No. F03AA06).	Maps the baseline character of the Scottish seascape at a strategic level and provides descriptions of its character as part of an assessment of seascape issues surrounding offshore windfarm developments to better inform the consideration of offshore windfarm development proposals for policy formulation and decision making.	Scottish waters
Google Earth Pro (2023).	Aerial photography	Study Area.
Long Distance Walkers Association (2023), 'Overview Map for Paths and Walks'.	Overview map for Long Distance Paths and Walks.	England, Scotland and Isle of Man.
National Trust (2023), 'Visit'.	Any specific visitor attractions or tourist destinations	Study Area.
Ordnance Survey (2023), 1:50,000 scale mapping.	Mapping	Study Area.
Ordnance Survey (2023), 1:20,000 scale mapping.	Mapping	Study Area.
Ordnance Survey (2023), County Region, Local Unitary Authority, Railways, Road and Settlements.	GIS datasets	Study Area.
Ordnance Survey (2023), Terrain 50 Digital Terrain Model.	Digital Terrain Model.	Study Area.
Ordnance Survey (2023), Terrain 5 Digital Terrain Model.	Digital Terrain Model.	Study Area.
Sustrans (2023), National Cycle Network.	GIS dataset of signed on road and traffic free cycling routes across the UK.	Study Area.

26.7.3 Summary of key receptors

26.7.3.4 The key landscape and visual receptors are summarised as follows:

- Landscape Character of the Isle of Man's eastern seaboard between Baldrine and Port Soderick: The Proposed Development would either be located within the townscape of Douglas or the landscape context of Groudle Glen, where visibility of the Proposed Development may alter the perceived character of the island's landscape.
- Perceived character and/ or special qualities of designated landscapes: The Proposed Development would be located within the seascape setting of designated landscapes, including AHLVs, and may have a visual impact on their landscape character or special qualities.

- Residential receptors within the main settlements of Douglas, Onchan and Baldrine: The Proposed Development may have a visual impact on the views experienced by their residents and their visual amenity.
- Transient receptors on the network of 'A' roads, particularly the A1/ Peel Road, A2/ Ramsey Road, A6, A25 and the A11/ King Edward Road: The Proposed Development may have a visual impact on views experienced by users of these roads.
- Recreational receptors using recreational routes, particularly those along the coast, such as the Isle of Man Steam Railway and Manx Electric Railway: The Proposed Development would be located near these routes and may have a visual impact on views experienced by users of these routes.
- Recreational receptors on long distance walks or cycle routes, particularly those along the coast, such as the *Raad ny Foillan*: The Proposed Development would be located within the seascape setting of the island and may have a visual impact on views experienced by users of these routes.
- Receptors at specific visitor attractions, such as Great Union Camera Obscura: The Proposed Development would be located within the setting of these attractions and views from them and visual amenity may be affected by the Proposed Development.

Representative Viewpoints

26.7.3.5 As the precise location for the onshore substation has not been decided at this stage, it is proposed that representative viewpoints are selected and agreed during further consultation with the Isle of Man Government as part of the EIA process. This will be informed by a ZTV analysis. These viewpoints will represent locations within the maximum extent of the LVIA Study Area where sensitive visual receptors would potentially be significantly affected by the Proposed Development. The viewpoint selection process will also consider the representation of different landscape character receptors, within which they are located. This enables the visual assessment to inform the wider assessment. While the aim of viewpoint selection is to achieve a distribution of viewpoints from different directions and distances across the LVIA Study Area, the priority is to ensure that the closer range or most sensitive receptors with the greatest potential to be significantly affected are fully represented. Comment on this approach to representative viewpoint locations is invited as part of this request for a Scoping Opinion. Visualisations will be produced in accordance with Landscape Institute (2019) guidance.

26.7.4 Further data collection to be undertaken

26.7.4.4 Further to the high-level characterisation of the baseline within this section of the scoping report, primary data acquisition will be undertaken through a series of surveys. These surveys will include field survey verification of the ZTV from LCTs, micro-siting of viewpoint locations, panoramic baseline photography and visual assessment survey from all representative viewpoints.

26.7.4.5 Viewpoint photography and visual assessment surveys are anticipated to start during winter 2023 to spring/ summer 2024, subject to appropriate weather conditions.

26.7.4.6 Further visual assessment surveys are then likely to be undertaken prior to preparation of the EIA with reportage within the EIA, using the photomontage visualisations to undertake field survey assessment of visual effects from each representative viewpoint.

26.7.5 Future baseline

26.7.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

26.8 Identification of impacts and effects

26.8.1 Key parameters for assessment

26.8.1.4 The landscape and visual scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- Landfall (above MHW) within Groudle Glen or landfall and Terrestrial Electrical Connection Cables, if landfall is at Douglas Bay; and
- Onshore Substation.

26.8.1.5 Construction and decommissioning phase impacts may arise as a result of the onshore construction/ decommissioning activities, including the presence of plant and partially constructed/ decommissioned onshore elements such as foundations and substructures, and may be direct impacts on the physical elements of the landscape or visual impacts on landscape character and/ or visual amenity.

26.8.1.6 Operation and maintenance phase impacts may arise due to visibility of the onshore infrastructure and related maintenance activity from surrounding areas of the landscape.

26.8.1.7 Due to the nature of the Proposed Development and evolving technology there is some uncertainty regarding the exact configuration of the final detailed design. To accommodate this, it is proposed that the assessment of effects arising from the onshore infrastructure and offshore infrastructure will be based on a 'Design Envelope' approach following the Scottish Government's Guidance for applicants on using the design envelope for applications under section 36 of the Electricity Act 1989 (2022) and the Planning Inspectorate's Advice Note Nine: Rochdale Envelope (2018).

26.8.2 Commitments

26.8.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to the LVIA are described in Table 26.2 below.

Table 26.2: Relevant commitments to Landscape and Visual.

ID	Commitment proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.

ID	Commitment proposed	How this measure will be secured	Rationale
Co15	Development of, and adherence to, a LEMP.	Consent condition(s).	Sets out the key onshore landscape and ecology elements subject to mitigation, compensation and enhancement.
Co21	The onshore electrical cables will be buried underground for their entire length.	Consent condition(s).	To minimise the effects of land loss, and impacts to soils and geology.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.

26.8.3 Approach to assessment of likely significant effects

26.8.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on Landscape and Visual receptors at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

26.8.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the project progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

26.8.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 26.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on landscape and visual receptors based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified LVIA lead.

26.9 Proposed approach to the EIA

26.9.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on landscape and visual amenity associated with the Proposed Development that have (or do not have) the potential to result in LSE.

26.9.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with

key stakeholders). The proposed approach to these impacts is described further within section 26.10.2; and

- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 26.10.3.

26.9.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

26.9.1.7 For the LVIA, the assessment of impacts will also follow specific guidance. This is further detailed within section 26.10.3 below.

26.9.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

26.10 Post-scoping

26.10.1 Overview

26.10.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For landscape and visual impacts, the scoping study has identified:

- Five impacts which have the potential to result in No LSE; and
- Four impacts which have the potential to result in LSE.

26.10.2 No LSE and next steps

26.10.2.4 The impacts of the Terrestrial Electrical Connection Cables have limited potential to result in LSE due to their burial below ground and the temporary nature of their installation. The Applicant will bring forward evidence in the form of a position paper or note to support this conclusion that will be provided to the Landscape and Archaeology Technical Advisory Group via the Evidence Plan Process during Q4 2023.

26.10.3 LSE and next steps

Supporting studies

26.10.3.4 Desk based studies and field survey work undertaken within the LVIA Study Area will inform the LVIA. Desk based review of landscape assessments and the ZTV will inform the LVIA baseline to identify receptors that may be affected by the onshore infrastructure and produce written descriptions of their key characteristics and value.

26.10.3.5 A preliminary desk-based assessment will be undertaken of landscape and visual receptors using ZTV analysis, to identify which landscape and visual receptors are unlikely to be significantly affected, that will be subject to a simple assessment; and those that are more likely to be significantly affected by the onshore infrastructure, that require a detailed assessment.

26.10.3.6 Interactions will be identified between the onshore infrastructure and the landscape and visual receptors, to predict potentially significant effects arising and measures may be proposed to mitigate effects.

26.10.3.7 Coastal landscapes have been characterised within the Isle of Man Landscape Character Assessment (2008). If a more detailed coastal character assessment is required by the DoI / Isle of Man Government, this would be carried out in accordance with 'Guidance Note Coastal Character Assessment' (NatureScot, 2018b).

Assessment Methodology

26.10.3.8 The EIA will assess the potential impacts on landscape and visual receptors identified in the Impacts Register (Annex 5.B).

26.10.3.9 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

26.10.3.10 For the LVIA, impact magnitude to landscape receptors will be determined through an assessment of the size/ scale of landscape impact, the degree to which landscape elements are altered and the extent to which the impacts change the key characteristics of the landscape. For visual receptors impact magnitude will be determined through an assessment of the size/ scale of visual impact, the extent to which the change would affect views, whether this is unique or representative of a wider area, and the position of the Proposed Development in relation to the principal orientation of the view and activity of the receptor will be undertaken. These judgements are combined to assess the magnitude of change on the landscape and visual receptors.

26.10.3.11 The sensitivity of landscape and visual receptors will be determined by an assessment of the susceptibility of landscape and visual receptors to specific change. An assessment of the value attached to landscape receptors and views will also be undertaken. Judgments on these factors will be combined to assess the sensitivity of the landscape and visual receptors to the Proposed Development.

26.10.3.12 The Transboundary Screening (Annex 5.D) has identified that transboundary effects are unlikely occur on landscape and visual receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will not be considered further within the EIA.

26.10.3.13 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on landscape and visual receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

26.11 Questions to Consultees

- Question 26.1: Do you agree with the Study Area that has been identified for the LVIA?;
- Question 26.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 26.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 26.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to the LVIA?; and
- Question 26.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?



Moor Vannin Offshore Wind Farm Scoping Report

Volume 4: Overarching Chapters

27 Climate Change

27.1 Introduction

- 27.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to climate change from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on climate change receptors.
- 27.1.1.2 In addition, it considers the likelihood of resulting effects from climate change on the Proposed Development. A summary of key receptors are described in section 27.4.3.
- 27.1.1.3 The climate change assessment will address:
- The potential impacts of the Proposed Development on climate change;
 - The GHG emissions as a result of activities associated with the Proposed Development, quantified in a Green House Gas (GHG) assessment; and
 - The potential impacts and risks of climate change on the Proposed Development through a climate resilience assessment to assess the vulnerability and climate resilience of the Proposed Development.
- 27.1.1.4 The potential inter-related impacts of climate change with other topics will be inherently addressed in other chapters of this Scoping Report. These Chapters are:
- Chapter 20, Land Use and Ground Conditions, which considers the likelihood of resulting effects on land use and ground conditions receptors;
 - Chapter 25, Hydrology, Hydrogeology & Flood Risk, which considers the likelihood of resulting effects on hydrological receptors; and
 - Chapter 29, Major Accidents and Disasters, which assess the potential effects the Proposed Development has on the risk of increasing major accidents and disasters.
- 27.1.1.5 As such, inter-related impacts are not considered further within this Chapter. This is explained further in section 27.7.2.

27.2 Legislation, policy and guidance

- 27.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 27.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities

become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 27.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to climate change. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 27.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.
- 27.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

27.2.2 Legislation

National legislation

- 27.2.2.4 The Climate Change Act 2021 is a piece of primary legislation that has been approved by Tynwald and received Royal Assent. The Act sets the Isle of Man's 'net zero by 2050' target into law.

International legislation and agreements

- 27.2.2.5 Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 sets out the information for inclusion within Environmental Statements and states that a description of the factors likely to be significantly affected by the development should include climate (for example the nature and magnitude of greenhouse gas emissions, and the vulnerability of the project to climate change).
- 27.2.2.6 In March of 2023, the 'Paris Agreement' extended to the Isle of Man. This is a legally binding international treaty on climate change committing all parties to the goal of limiting global warming to *"well below 2 degrees Celsius, preferably to 1.5 degrees Celsius, compared to pre-industrial levels"*. The Agreement requires all parties to submit plans to reduce their emission every 5 years.

27.2.3 Policy

National policy

- 27.2.3.4 Policies with the Isle of Man's Strategic Plan 2016 includes:
 - Environment Policy 9
 - *"A precautionary approach will be adopted for development relating to land affected, or likely to be affected, by erosion or land instability. In the case of receding cliffs, development will not be permitted in areas where erosion is likely to occur during the lifetime of the building"*. The plan expands on this by highlighting that coastal flooding and erosion, as well as inland flooding due to increased river and ground water levels are likely to become increasingly important issues in future years with the continuation of climate change.

- Appendix 4 – Guidance on requirements for the undertaking of a Flood Risk Assessment;
 - This guidance states that the effect of climate change on probabilities such as depth of floods, routes and speed of water flow should be examined.

27.2.3.5 In addition to the Strategic Plan 2016, the Isle of Man also has the Isle of Man Climate Change Plan 2022-2027. This plan sets out the strategies, policies, and proposals for reducing emissions. Deliverables related to electricity emissions include: an energy strategy to supply 100% of the Isle of Man’s electricity from carbon neutral sources by 2030 and at least 20 Megawatts (MW) of locally generated, renewable electricity to be available by 2026.

International policy

27.2.3.6 Section 2.6.7 Climate Change Adaptation and Mitigation of the UK Marine Policy Statement sets out that consideration will need to be given to how the marine environment can adapt to the impacts of climate change and an assessment of likely and potential impacts from climate change.

27.2.3.7 Part 4.8 of the overarching NPS for Energy (EN-1) sets out generic considerations that should be taken into account to help ensure that renewable energy infrastructure is resilient to climate change over the proposals estimated lifetime. and advises that *“applicants must consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure”* and that *“the ES should set out how the proposal will take account of the projected impacts of climate change”*.

27.2.3.8 Finally, Paragraph 2.3.4 of the NPS for Renewable Energy Infrastructure (EN-3) states that offshore and onshore wind farms should consider how the proposal would be resilient to storms.

27.2.4 Guidance

National guidance

27.2.4.4 There are no guidance documents prepared centrally by the Isle of Man Government for the assessment of climate change.

International guidance

27.2.4.5 UK guidance documents have been used in lieu of domestic guidance. These documents relate to established best practice for the assessment of climate change within the development control process. This includes the following:

- DMRB LA114 Climate (Highways England, 2021);
- Climate Change Resilience and Adaptation (IEMA, 2020); and
- Assessing Greenhouse gas Emissions and Evaluating their Significance (IEMA, 2022).

27.3 Study Area

27.3.1.4 Two Study Areas will be used:

- GHG emissions to the atmosphere are not geographically limited and have a global effect rather than directly affecting a specific local receptor. The receptor for GHG emissions is the global atmosphere, therefore effects from the Proposed Development’s GHG emissions on the climate will be considered on a global scale.

- The Study Area relating to the impacts from climate change on the Proposed Development will be defined as the area within which it is anticipated all associated onshore and offshore infrastructure will be installed.

27.4 Baseline

27.4.1 Overview of baseline

27.4.1.4 The Intergovernmental Panel on Climate Change (IPCC)'s most recent synthesis Report (IPCC, 2023) on the science of climate change, reported that:

- Average global surface temperature was 1.09°C higher in 2011–2020 than 1850–1900, with larger increases over land (1.59°C) than over the ocean (0.88°C). The likely range of total human-caused global surface temperature increase from 1850–1900 to 2010–2019 is 0.8°C to 1.3°C, with a best estimate of 1.07°C. Over this period, it is likely that well-mixed GHGs contributed a warming of 1.0°C to 2.0°C.
- Global net anthropogenic GHG emissions have been estimated to be 59 ± 6.6 GtCO₂-eq⁹ in 2019, about 12% (6.5 GtCO₂-eq) higher than in 2010 and 54% (21 GtCO₂-eq) higher than in 1990, with the largest share and growth in gross GHG emissions occurring in CO₂ from fossil fuels combustion and industrial processes.
- Global mean sea level increased by 0.20 [0.15 to 0.25] m between 1901 and 2018.

27.4.1.5 The Isle of Man Greenhouse Gas Inventory provides data on the existing GHG emissions for the Isle of Man, with emissions arising from a number of different sectors, but typically dominated by industrial processes, residential, business and energy supply.

27.4.1.6 Data from the Ronaldsway Climate Station in the Isle of Man reports the following averages between 1991 and 2020:

- Maximum temperature (°C) – 12.099
- Minimum temperature (°C) – 7.90
- Days of air frost (days) – 51.29
- Sunshine (hours) – 1432.90
- Rainfall (mm) – 985.96
- Monthly mean wind speed at 10m (knots) – 8.88

27.4.2 Data Sources

27.4.2.4 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 27.1.

Table 27.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Climate Change 2014 Synthesis Report (IPCC, 2014)	A compilation of assessments dealing with climate change, based on the most recent scientific, technical and socio-economic literature in the field.	Global

Source	Summary	Coverage of the Study Area
Isle of Man Greenhouse Gas Inventory	The Isle of Man's greenhouse gas emissions are estimated as part of the UK's reporting to the United Nations Framework Convention on Climate Change (UNFCCC) each year. This 'inventory' of emissions and removals is estimated according to the IPCC guidance.	The Isle of Man
Met Office Climate Averages	Provides climatic data from the Ronaldsway (Isle of Man) Climate Station.	The Isle of Man
Climate Change Act 2021	The Act sets carbon targets (including interim targets) and identifies planning and reporting duties of public bodies	The Isle of Man

27.4.3 Summary of key receptors

27.4.3.4 The key sensitive receptors that will be considered are:

- The onshore and offshore infrastructure (relating to the resilience of the Proposed Development to climate change), these are;
 - Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
 - Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Isle of Man Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuits and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be 60 m depending on the presence of constraints.
 - Onshore Substation (OnSS): provides housing of the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat loss. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700 m². Max dimensions will be 45 m x 80 m with a max height of 25 m.
 - Offshore Electrical Connection Search Area and the Offshore Array: this will contain all Offshore Infrastructure and associated works.
- The atmosphere (relating to the lifecycle impact of GHG emissions resulting from the construction, operation and decommissioning of the Proposed Development).

27.4.3.5 As set out in paragraph 27.1.1.7 , several impacts on other receptor groups are considered inherently within other chapters of the scoping report, for example,

Hydrology (sea level rise) (Chapter 25, Hydrology and Flood Risk), Land Use (effect of the Proposed Development on land use) (Chapter 20, Land Use and Ground Conditions) and Major Accidents and Disasters (risk of increased storminess on construction and operation personnel) (Chapter 29, Major Accidents and Disasters).

27.4.3.6 As such, there are no other specific receptors considered within this topic.

27.4.4 Further data collection to be undertaken

27.4.4.4 The following data collection is to be undertaken:

- Manx projections for grid average marginal carbon intensity of electricity generation; and
- Use of published Environmental Product Declaration's (EPD) concerning Life Cycle Assessment research into embodied carbon associated with construction, operation and maintenance, and decommissioning (recycling and recovery) of wind turbines and wind farm developments.

27.4.5 Future Baseline

27.4.5.4 As set out in the IPCC's most recent Synthesis Report (IPCC 2023), modelled scenarios and pathways are used to explore future emissions, climate change, related impacts and risks, and possible mitigation and adaptation strategies. The five pathways that cover a range of GHG emissions are: very high, high, intermediate, low and very low.

27.4.5.5 The Synthesis Report goes on to state that the assessed best estimates and very likely ranges of warming for the years 2081–2100 with respect to 1850–1900 vary from an average of 1.4°C in the very low GHG emissions scenario to an average of 2.7°C in the intermediate GHG emissions scenario and an average of 4.4°C in the very high GHG emissions scenario.

27.4.5.6 It goes on to state that predicted climate change is anticipated to give rise to deleterious effects across the globe arising from temperature rises, changes to the global water cycle, changes to ocean temperatures, changes to sea level and changes to the global carbon cycle.

27.4.5.7 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

27.5 Identification of impacts and effects

27.5.1 Key parameters for assessment

27.5.1.4 The key parameters for assessment are the onshore and offshore infrastructure in relation to their resilience to climate change and the lifecycle GHG emissions from the construction, operation and decommissioning of the Proposed Development and their resulting effects on the global atmosphere. The onshore and offshore infrastructure is detailed below.

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).

- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Isle of Man Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be 60 m depending on the presence of constraints.
- Onshore Substation (OnSS): provides housing of the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat loss. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700 m². Max dimensions will be 45 m x 80 m with a max height of 25 m.
- Offshore Electrical Connection Search Area and the Offshore Array: this will contain all Offshore Infrastructure and associated works.

27.5.1.5 For further details on these elements, see Chapter 3, Project Description.

27.5.2 Commitments

27.5.2.4 As part of the iterative design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to climate change are described in Table 27.2 below.

27.5.2.5 It should be noted that Orsted A/S has the following key climate targets:

- 2025: 98 % reduction in scope 1-2 emissions intensity (from 2006);
- 2032: 50 % absolute reduction in scope 3 emissions (from 2018); and
- 2040: Net-zero emissions in scopes 1-3 and 90 % reduction in absolute emissions (scope 3, from gas sales).

27.5.2.6 The identified commitments are subject to further environmental assessment, scheme development and stakeholder engagement/ consultation.

Table 27.2: Relevant commitments to climate change.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent Condition(s)	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co14	The supply chain will be encouraged to reduce, minimise or avoid GHG emissions during the manufacture, transport and installation process for the Proposed Development	Consent Condition(s)	To minimise GHG emissions and optimise the net positive benefits of the Proposed Development.
Co19	Development of, and adherence to, a CoCP.	Consent Condition(s)	Sets out the principles for commitments and management

ID	Measure proposed	How this measure will be secured	Rationale
			measures during onshore construction.
Co50	Manage and reduce GHG emissions during the operational phase.	Consent Condition(s)	To minimise GHG emissions and optimise the net positive benefits of the Proposed Development.
Co51	Consider the future climate change baseline in the design of onshore and offshore infrastructure.	Consent Condition(s)	To ensure climate resilience and to mitigate or avoid future adverse effects of climate change on the onshore and offshore infrastructure.

27.5.3 Approach to assessment of likely significant effects

27.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on climate change at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

27.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.

27.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 27.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on climate change based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified climate change lead.

27.6 Proposed approach to the EIA

27.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on climate change associated with the Proposed Development that have (or do not have) the potential to result in LSE.

27.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 27.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 27.7.3.

- 27.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.
- 27.6.1.7 For climate change, the assessment of impacts will also follow specific guidance. This is further detailed within section 27.7.2 below.
- 27.6.1.8 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

27.7 Post-scoping

27.7.1 Overview

- 27.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For climate change, the scoping study has identified:
- Two impacts which have the potential to result in No LSE; and
 - Five impacts which have the potential to result in LSE.
- 27.7.1.5 Climate change projections are inherently inclusive of other developments and therefore a separate cumulative assessment is not proposed.

27.7.2 No LSE and next steps

- 27.7.2.4 Where relevant, further evidence to support no LSE will also be brought forward where topics inherently consider climate change, for example, Hydrology (sea level rise) (Chapter 25, Hydrology and Flood Risk), Land Use (effect of the Proposed Development on land use) (Chapter 20, Land Use and Ground Conditions) and Major Accidents and Disasters (risk of increased storminess on construction and operation personnel) (Chapter 29, Major Accidents and Disasters) via position papers as part of the Evidence Plan Process.

27.7.3 LSE and next steps

Supporting studies

- 27.7.3.4 The GHG Assessment will involve modelling to inform the assessment of impacts related to climate change. Modelling is based on assumptions of the exact onshore and offshore infrastructure, fabrication, EPDs, transportation and construction.
- 27.7.3.5 As set out in section 27.1, the following supporting studies will be required to inform the assessment of impacts related to climate change:
- A GHG Assessment; and
 - Climate resilience assessment.

Assessment Methodology

- 27.7.3.6 The EIA methodology used to assess the potentially significant effects of these impacts is outlined in Chapter 5 of this Scoping Report (EIA Methodology). In addition to this general approach, the assessment of effects on climate change will also follow the following guidance documents where they are specific to this topic:

- LA 114 Climate (DMRB, 2020);
- Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation (IEMA, 2020); and
- Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2nd Edition (IEMA 2017).

27.7.3.7 As outlined in Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.

27.7.3.8 For climate change, impact magnitude will be determined by a combination of the probability and consequence. The probability will take into account the chance of the impact occurring over the lifespan of the Proposed Development if the risk is not mitigated. The DMRB states that once the climate change impacts have been identified, a risk assessment of the impacts on the operational phase project shall be undertaken using the following framework shown in Table 27.3 and Table 27.4.

Table 27.3: Likelihood categories (source: DMRB, 2020).

Likelihood category	Description (probability and frequency of occurrence)
Very high	The event occurs multiple times during the lifetime of the project (35 years) e.g. approximately annually, typically 35 events.
High	The event occurs several times during the lifetime of the project (35 years) e.g. approximately once every five years, typically 7 events.
Medium	The event occurs limited times during the lifetime of the project (35 years) e.g. approximately once every 15 years, typically 2 events.
Low	The event occurs during the lifetime of the project (35 years) e.g. once in 35 years.
Very low	The event can occur once during the lifetime of the project (35 years).

Table 27.4: Measure of consequence (source: DMRB, 2020).

Consequence of impact	Description
Very large adverse	Operation - national level (or greater) disruption to strategic route(s) lasting more than 1 week.
Large adverse	Operation - national level disruption to strategic route(s) lasting more than 1 day but less than 1 week or regional level disruption to strategic route(s) lasting more than 1 week.
Moderate adverse	Operation - regional level disruption to strategic route(s) lasting more than 1 day but less than 1 week.
Minor adverse	Operation - regional level disruption to strategic route(s) lasting less than 1 day.
Negligible	Operation - disruption to an isolated section of a strategic route lasting less than 1 day.

27.7.3.9 The consequence will reflect the geographical extent of the effect; the degree of harm to the receptors affected; and the duration, frequency and reversibility of the impact. As set out in Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA and Arup, 2017), the receptor of GHG emissions, the global atmosphere, *“has a high sensitivity, given the*

severe consequences of global climate change and the cumulative contributions of all GHG emission sources”.

27.7.3.10 Receptor sensitivity will be determined by considering the value and importance of the receptor, as well as susceptibility and vulnerability of the receptor and is based on the general methodology set out in Chapter 5, EIA Methodology. Table 27.5 sets out how levels of sensitivity will be defined.

Table 27.5: Receptor sensitivity.

Receptor Sensitivity	Definition
High Sensitivity	High susceptibility = receptor has no ability to withstand/not be substantially altered by the projected changes to the existing/prevaling climatic factors (e.g. lose much of its original function and form) and/or High vulnerability = receptor is directly dependent on existing/prevaling climatic factors and reliant on these specific existing climate conditions continuing in future (e.g. river flows and groundwater level) or only able to tolerate a very limited variation in climate conditions.
Medium Sensitivity	Moderate susceptibility = receptor has some limited ability to withstand/not be altered by the projected changes to the existing/prevaling climatic conditions (e.g. retain elements of its original function and form) and/or Moderate vulnerability = receptor is dependent on some climatic factors but able to tolerate a range of conditions (e.g. a species which has a wide geographic range across the entire UK but is not found in southern Spain)
Low Sensitivity	Low susceptibility = receptor has the ability to withstand/not be altered much by the projected changes to the existing/prevaling climatic factors (e.g. retains much of its original function and form) and/or Low vulnerability = climatic factors have little influence on the receptors

27.7.3.11 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

27.7.3.12 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other marine users’ receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

27.8 Questions to Consultees

- Question 27.1: Do you agree with the Study Area that has been identified for climate change?;
- Question 27.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;

- Question 27.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 27.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to climate change?;
- Question 27.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 27.6: Is there any other legislation, policy, or guidance that should be considered?; and
- Question 27.7: Do you agree with the climate change projections used (IPCC, 2023)?

28 Socioeconomics, Tourism & Recreation

28.1 Introduction

- 28.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to socioeconomics, tourism and recreation from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on socioeconomics, tourism and recreation receptors.
- 28.1.1.2 The receptors identified have been selected based on guidance for assessing offshore wind farms and experience of assessing socioeconomics, tourism and recreation for offshore wind farms in the UK.
- 28.1.1.3 However, there is a need for further consideration by governing bodies in the Isle of Man, and other consultees, so the selection of receptors can be finalised.

28.2 Legislation, policy and guidance

- 28.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 28.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 28.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to socioeconomics, tourism and recreation. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 28.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the Dol will address applications subject to EIA. Pending publication of the guidance, the Dol has stated that the current practice from England and Wales should be followed.
- 28.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

28.2.2 Legislation

National legislation

28.2.2.4 There is a lack of legislation relevant to the assessment of socioeconomics and tourism, however following legislation is relevant to the assessment of recreational effects:

- Isle of Man Government. (1986), 'Highways Act 1986'.

28.2.3 Policy

National policy

28.2.3.4 There are several statutory development plans which make up the planning framework for the Isle of Man. Central to this is the Isle of Man Development Plan (Isle of Man Government, 2016a) and the Strategic Plan (Isle of Man Government, 2016b) These documents have a number of relevant policies and strategic priorities that will be considered in the assessment of socioeconomics, tourism and recreation.

28.2.3.5 The Draft Planning Policy Statement on Planning and the Economy (Isle of Man Government, 2012) was produced to specify the manner in which the Dol would deal with planning applications for development which would result in economic growth.

28.2.3.6 The Government updated its Economic Strategy in 2022 (Isle of Man Government, 2022, Isle of Man Economic Strategy). This seeks to build a secure, vibrant and sustainable future for the Island.

28.2.3.7 In 2023, 'Our Island Plan' was updated (Isle of Man Government, 2023) which sets out the policies and the strategic programmes and core actions for the lifetime of the Island Plan including incorporating the Economic Strategy.

28.2.3.8 There are several policy documents related specifically to tourism and recreation including the Isle of Man's Visitor Strategy (Visit Isle of Man, 2022), Strategy for Sport (Isle of Man Government, 2014), Active Travel Strategy (Isle of Man Government, 2018b), PRoW Policy and Strategy (Isle of Man Government, 2018c) and Highways Act (Isle of Man Government, 1986).

28.2.4 Guidance

National guidance

28.2.4.4 Chapter 7.1 of the Manx Marine Environmental Assessment (Isle of Man Government, 2018a) provides guidance on what developers should consider in assessments of tourism and recreation, as well as initial considerations for handling potential effects.

International guidance

28.2.4.5 There is no specific Isle of Man Government legislation which directly gives guidance on the methods by which socio-economic effects related to the development of offshore wind farms or other infrastructure should be assessed. However, the following UK guidance is relevant. In the absence of specific guidance on assessing socio-economic effects for projects within the jurisdiction of the Isle of Man, the proposed approach to the assessment is based on the draft UK National Policy Statements (NPSs). Guidance for socioeconomics can be found in the draft Overarching NPS Energy Development (EN-1) (Department for Energy Security and Net-Zero, 2023a). This document contains information on the socio-economic impacts that need to be considered when the impacts of nationally significant energy infrastructure projects are assessed in the UK. The status of the draft UK NPSs will be reviewed throughout the EIA process and should new guidance be adopted, this will be considered. There is also other relevant guidance for assessing socio-economic impacts that has been drawn upon to inform the scoping exercise, for example IEMA

and Oxford Brookes University have published research-based guidance for assessing socio-economic impacts (Oxford Brookes University, 2020). With regard to scoping the IEMA and Oxford Brookes University guidance is that projects should:

- Draw on understanding of characteristics of project and host area baseline to identify the likely most significant impacts;
- Recognise variations in impact issues over the project lifecycle;
- Address distributional impacts (winners and losers); and
- Show awareness of statutory guidelines.

28.3 Study Areas

28.3.1.4 Potential impacts on socioeconomics, tourism and recreation are likely to occur at a range of spatial levels. A multi-tier approach has therefore been adopted to define the Study Areas, as shown in Figure 28.1. The three spatial levels and associated relevant receptors are defined as follows:

28.3.2 Local Onshore Study Area

28.3.2.4 The local onshore Study Area will be the focus for the assessment of localised direct and indirect effects on social infrastructure (for example health facilities, schools and community groups), tourism and recreation receptors as a result of the development of onshore infrastructure. It includes the Terrestrial Electrical Connection Search Area that will contain the Terrestrial Electrical Connection Cable and onshore substation. A 500 m buffer has been added to this area to capture the potential visual, noise and traffic related impacts on recreation and tourism asset receptors. It is anticipated that the definition of the Local Onshore Study Area will be refined when the preferred onshore infrastructure route corridor and substation are finalised.

28.3.3 Inshore and Offshore Study Area

28.3.3.4 The Inshore and Offshore Study Area will be the focus for the assessment of effects on inshore and offshore recreation users. It includes the Offshore Array area, Offshore Electrical Connection Search Area and the inshore coastal areas of the Isle of Man. The inshore area is defined using a 250 m buffer from MLW as areas that are commonly used by inshore recreational users such as bathers and kayakers. Please note that the Inshore and Offshore Study Area marked on Figure 28.1 includes the 250 m buffer from mean low water around the entire island, but that only parts of which that are within the Zone of Theoretical Visibility (ZTV) will be considered. The ZTV is further described in Chapter 15, Seascape, Landscape & Visual Impact Assessment.

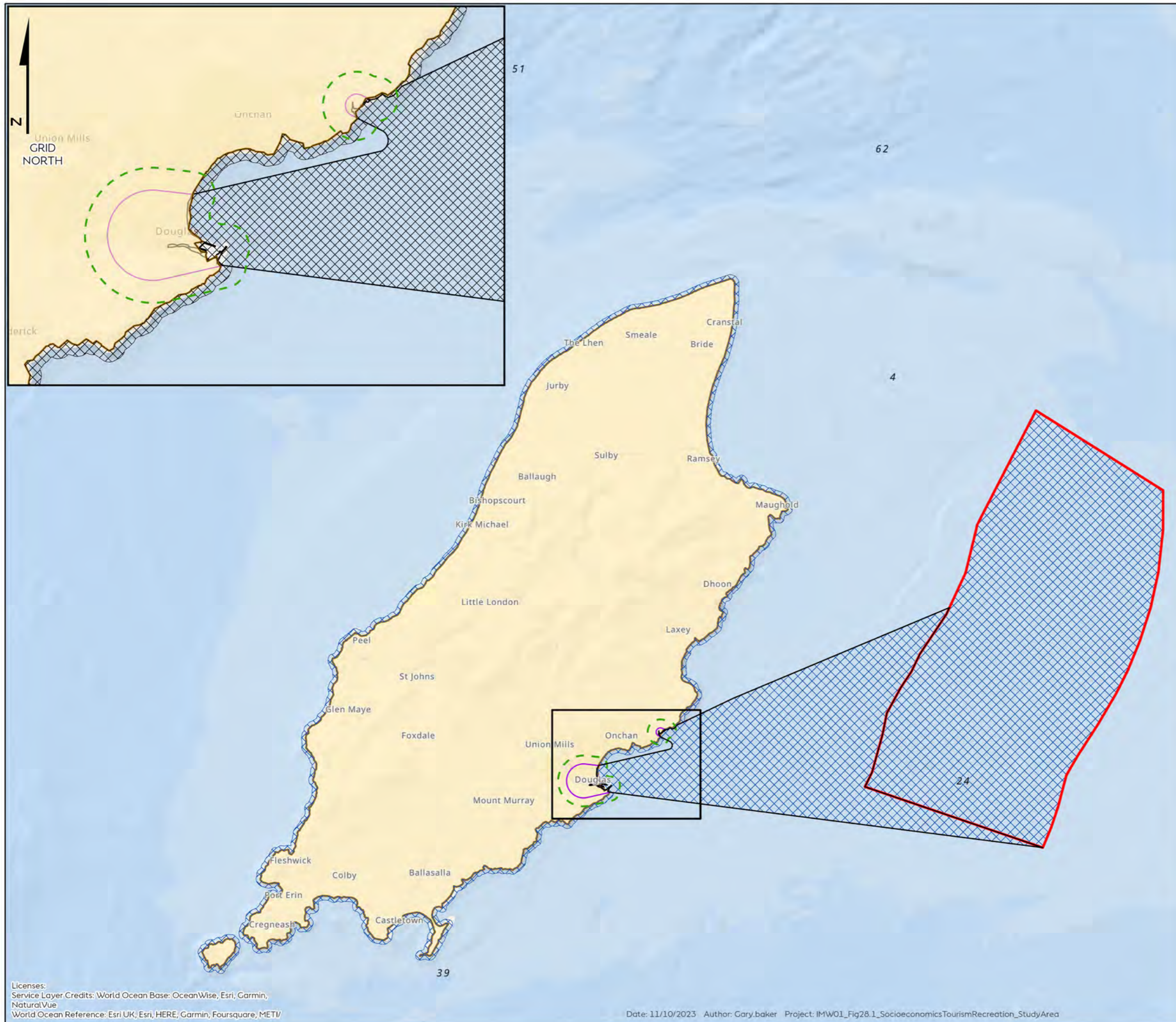
28.3.4 Wider Study Area

28.3.4.4 The Wider Study Area covers the entire geography of the Isle of Man. Due to the small size of the island, any economic impacts arising from supply chain expenditure, job creation or effects on imports and exports are likely to affect businesses and residents across the whole island.

28.3.4.5 The main potential source of impact on tourism would be from the visual impact of the wind farm, displacement of visitors from visitor accommodation resulting from use of visitor accommodation by construction workers and impacts on the perceptions of the Isle of Man as a visitor destination. It is anticipated that this could affect the whole island, not just those areas from which the wind farm is visible.

28.3.5 Zone of Theoretical Visibility

28.3.5.4 The Zone of Theoretical Visibility (ZTV) of the offshore infrastructure will be considered as part of the assessment on the volume and value of tourism and is further described in Chapter 15, Seascape, Landscape & Visual Impact Assessment.



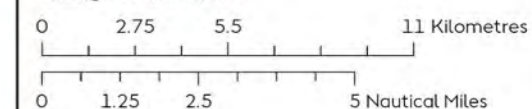
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Figure 28.1
Socio-economics, Tourism and Recreation Study Area

- Local Onshore Study Area
- Inshore and Offshore Study Area
- Wider Study Area
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:224,000



REV	REMARK	DATE
1	First issue	11/10/2023

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Date: 11/10/2023 Author: Gary.baker Project: IMW01_Fig28.1_SocioeconomicsTourismRecreation_StudyArea

Title: Socioeconomics Study Area
Document no: IMW01_Fig28.1
Created by: CB
Checked by: RMc
Approved by: SB



28.4 Baseline

28.4.1 Overview of the baseline

28.4.1.4 The Isle of Man had a population of 84,300 in 2023 (Statistics Isle of Man, 2023), 23% of people are over the age of 65 compared to 19% in the UK. According to the 2021 census (Statistics Isle of Man 2021), 52,100 (or 62% of the total population) are core working-age people (aged 16-64).

Socio-economics

28.4.1.5 The socio-economic data shows Isle of Man has is close to full employment, with very limited capacity in the labour market. As of March 2023 (Statistics Isle of Man, 2023), it was estimated that there were around 35,950 persons employed, undertaking 52,320 jobs. It is also estimated that there were 8,130 self-employed individuals. This suggests a large number of jobs are taken by people who live outside the Isle of Man⁵. There are only 291 people unemployed (International Labour Organization (ILO) measure), representing an unemployment rate of 0.7% (of the economically active population). In contrast there are nearly 2,750 job vacancies meaning there are 9.4 job vacancies for every unemployed resident (Statistics Isle of Man, 2023).

28.4.1.6 The key industries on the Isle of Man include finance, eGaming, information and technology, motorsports, tourism, aerospace, manufacturing, biomedical, and food and drink. There are some concentrations of employment in sectors which could potentially benefit from supply chain opportunities from offshore wind projects. These include 3,390 jobs in construction (6.5% of all jobs), 1,530 jobs in transport and communication (2.9%) and 1,290 jobs in information and communications technology (2.5%) (Statistics Isle of Man, 2023).

28.4.1.7 The Isle of Man Government's latest Economic Strategy (Isle of Man Government, 2022) notes that the Island's economy has performed well over the past decade and is a leader in this indicator among the Crown Dependencies. Government reserves are healthy, and the economy is diverse. However, at the same time, real incomes are under strain, with wages not keeping pace with the cost of living, even before recent increases in inflation. There is a growing wealth disparity between households, and an ageing population means demand for public services is rising, while a rising tax burden is falling on the economically active population. The Government's finances (and the public services they support) rely largely on taxation of personal incomes and expenditures. As these come under pressure due to demographic changes, the Government's financial position is likely to come under strain.

28.4.1.8 There is a variety of social and community infrastructure found in the Local Onshore Study Area including schools, nurseries, religious buildings, courts, youth clubs and healthcare facilities.

Tourism and recreation

28.4.1.9 Tourism is an important sector to the island economy. As of Q1 of 2023 there were 820 jobs in tourist accommodation and 2,750 jobs in catering and entertainment (Statistics Isle of Man, 2023). The Isle of Man Government's Visitor Strategy sets out an ambition for a high level of growth in the visitor economy. In 2019, the island welcomed almost 330,000 visitors who spent around £142m during their stay and

⁵The persons employed and self-employed data includes a number of individuals who are both employed and self-employed. The difference in number of jobs compared to people who are employed can be explained by people having more than one job or jobs being taken by people who do not live on the Island. It is estimated that the large factor in this difference is jobs being taken by people who do not live on the Island as double jobbing rate do not usually exceed 5%.

journey to and from the Island. The Government wants to increase this to 500,000 visitors spending £310m by 2023.

- 28.4.1.10 Visitor and recreational activities on the island include walking, cycling, mountain biking, adventure and sea sports, Manx heritage, arts and culture, nature and wildlife discovery and marine leisure. Key assets include the island's UNESCO Biosphere Reserve status (the only entire nation in the world to be awarded this), the Raad ny Foillan (Manx Gaelic for 'The Way of the Gull'); the long-distance coastal path which goes round the whole island, and its high-profile events including the TT motorbike races.
- 28.4.1.11 The Local Onshore Study Area is located within Douglas and Groudle Bay. Douglas is the capital and largest town of the Isle of Man, with a population of approximately 26,700 (Isle of Man Government, Statistics Isle of Man, 2021).
- 28.4.1.12 Groudle Bay sits two and a half miles north of Douglas. Within the Local Onshore Study Area is Groudle Glen, a visitor destination recognised by Visit Isle of Man. A small water wheel is situated in the lower glen. Further down the glen, the miniature Groudle Glen Railway run by local enthusiasts operates on certain days throughout the year. The line curls around the headland to a small cove where the former operators of the glen kept Californian sea lions as an attraction.
- 28.4.1.13 The Local Onshore Study Area includes Douglas Harbour and stretches over 1 km inland. Part of the Local Onshore Study Area covers the Douglas Promenade. This is an attractive place for visitors, with its Victorian heritage, Douglas War Memorial and Material Gardens, Horse Trams and Electric Railway, attractive public realm and walkway and views out to sea. It sits in front of Douglas central beach and several Victorian townhouse hotels front onto the promenade.
- 28.4.1.14 In the Local Onshore Study Area there are a number of bars, restaurants and hotels which form an important part of the capital's visitor economy. There are recreational facilities that are typically found within a town such as a tennis courts, gyms and bowling and snooker clubs. Groudle Bay does not offer these recreational facilities, however it does offer an 18-hole links golf course, King Edward Bay, which offers excellent landscape and coastal views due to its elevation and proximity to the coast.
- 28.4.1.15 Due to the nature of the Local Onshore Study Area there are a limited number of outdoor recreational assets with two PRow (no. 460 and 223) within the Local Onshore Study Area in Douglas and two PRow within the Local Onshore Study Area in Goule Bay (no.186 and 429). A number of the long-distance walking trials on the island also integrate with the Local Onshore Study Area (Millennium Way, Raad ny Foillan and the Heritage Trail (Old Railway Line)).
- 28.4.1.16 Based on an initial desk-based assessment there are a number of offshore recreation organisations including Douglas Bay Yacht Club, Sea Kayaking Isle of Man, Heroes on the Water, Laxey Sailing Club operating on the island. These clubs use the Isle of Man's Territorial Seas. There are other organisations based in the Isle of Man that may potentially use the Isle of Man's Territorial Seas. For example, Scuba diving clubs can be found in the Isle of Man and they may use dive sites in close proximity to the Offshore Array area.

28.4.2 Data sources

- 28.4.2.4 A more detailed baseline characterisation assessment will be conducted to inform the ES post-scoping. A full list of data sources to be used in the baseline is set out in Table 28.1 below. The baseline above has drawn upon a number of these sources but has presented headline data only. The ES baseline will go into more detail in terms of trends over time, spatial patterns, sector strengths and demographic characteristics.

Table 28.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Isle of Man Census (Statistics Isle of Man, 2021)	The census is a national survey of people and households in the Isle of Man. This provides data on: <ul style="list-style-type: none"> • Population and demographics; • Employment by sector; and • GDP by sector. 	Isle of Man
Google Maps	Desk based research of onshore tourism & recreation receptors	Offshore Electrical Connection Search Area and coastal areas within ZTV
Isle of Man Visitor Economy Strategy 2022-2032 (Visit Isle of Man, 2022)	Tourism volume and value, visitor characteristics and other key stats including future sector growth targets.	Isle of Man
Isle of Man Public Rights of Way Map (Isle of Man Government, Department for Infrastructure, 2023)	Map showing location of PRoW infrastructure across the Isle of Man.	Isle of Man
National Income Accounts 2008/09 – 2020/21 (Statistics Isle of Man, 2010-2022)	Latest report measures the size of the Isle of Man economy (GDP), the contribution of each sector and the economy's performance over time.	Isle of Man
Quarterly Statistical Report Q1 2023 (Statistics Isle of Man, 2023).	Includes statistics on: <ul style="list-style-type: none"> • Population; • Employment, Jobs & Labour market; • Housing Market value and transactions; • No. of planning approvals & Building Control applications; • No. of registered ships and tonnage; • 12 month rolling average electricity consumption (000's); • Work permits and NI numbers to foreign nationals; and • Company formation and no. of businesses. 	Isle of Man
Isle of Man Passenger surveys (Statistics Isle of Man, 2010-2019).	Passenger surveys are available from 2009 to 2018 and provide information regarding the number and type of passengers travelling from the island (type of traveller, method of travel (air or sea) and average expenditure.	Isle of Man
Isle of Man Social Attitudes surveys (Isle of Man Government,	Surveys ran from 2016 to is 2019. These provided resident feedback on employment, housing, recreation and leisure, renewable energy and transport and travel.	Isle of Man

Source	Summary	Coverage of the Study Area
Economic Affairs Cabinet Office, 2016-2019)		
Isle of Man Housing Market (Isle of Man Government, Statistics Isle of Man., 2017-2023)	Housing market report available from 2018 to 2022. Includes data on property prices, long term affordability, housing stock and transaction volumes. A vacant property review was undertaken in 2019.	Isle of Man
Isle of Man Economic Dashboard (Isle of Man Government Treasury, 2023)	Includes latest statistics on: <ul style="list-style-type: none"> • International economy; • Energy; • Jobseekers; • Vacancies; • Footfall (Douglas, 2019-2023); and • Transport (Air & Sea passenger departures 2019-2023), visitor & resident estimates. 	Isle of Man

28.4.3 Summary of key receptors

28.4.3.4 The key sensitive receptors are:

- The economy of the Isle of Man;
- Jobs/ employment within Isle of Man;
- Tourism receptors within Isle of Man;
- Tourism employment and tourism economy of the Isle of Man;
- Social infrastructure within the Local Onshore Study Area;
- People engaging in recreation activities inshore and offshore including scuba divers, bathers, kayakers, surfers and sailors.
- Tourism and recreation businesses, organisations and assets within the Local Onshore Study Area; and
- Businesses exporting/ importing from/ to Isle of Man.

28.4.4 Further data collection to be undertaken

28.4.4.4 Most of the data used in the socioeconomics, tourism and recreation assessment is available through secondary sources in the public domain (e.g. socio-economic datasets). However, it should be noted that the assessors may request further bespoke socio-economic data where this is not publicly available. The availability of this data will be discussed with stakeholders during the consultation process.

28.4.5 Future baseline

28.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

28.5 Identification of impacts and effects

28.5.1 Key parameters for assessment

28.5.1.4 The socioeconomics, tourism and recreation assessment will be based on the construction, operation and maintenance and decommissioning of the Proposed Development.

28.5.1.5 The assessment will be based on a widely used approach for modelling economic impacts of offshore wind farms. The key parameter and assumption relevant to the economic assessment is the capacity of the Proposed Development. The economic modelling of jobs, Gross Value Added (GVA) and export income will be based on the anticipated capacity of the Proposed Development. From this capacity, the cost of the Proposed Development will be estimated using industry benchmark data on costs of developing offshore wind farms in the UK (using a range of published sources such as the Crown Estate's guide to an offshore wind farm (Crown Estate, 2019)). It should be noted that this is an assessment tool only. The capacity of the wind farm is not yet fixed.

28.5.1.6 The economic modelling will be subject to a number of uncertainties including port location, supply chain capacity of the Isle of Man and the evolution of offshore wind technology. Where significant uncertainty exists the ES assessment will clearly state the level of uncertainty and the probability of impact where required.

28.5.1.7 The socioeconomics, tourism and recreation scoping assessment is based on the construction, operation and maintenance and decommissioning of the Proposed Development, and the following assumptions:

- Fabrication, transport and installation of up to 100 Wind Turbine Generators (WTGs) (including gearboxes, transformers, power electronics and control equipment and up to 300 blades);
- Maximum blade tip height: 389 m above LAT (Lowest Astronomical Tide)
- Closest distance to shore (Maughold Head Head): 11 km from the Offshore Array.
- Up to 100 steel or concrete WTG foundations;
- Up to five Offshore Substations and associated foundations (OSSs);
- Up to 490 km of Array Cables, 100 km of Interlink Cables, 90 km of Offshore Electrical Connection Cables and 125 km of export cables (Route to Market Assets) with up to 15% of all cabling requiring cable protection;
- Utilisation of multiple specialist installation and support vessels; and
- A single onshore substation (OnSS).

28.5.1.8 The resulting visual impact of the maximum design scenario for the Offshore Array will be considered with regard to impacts on tourism. Chapter 15, Seascape, Landscape & Visual Impact Assessment discusses how visual impacts will be assessed in more detail, and these assessments will be drawn upon as part of the ES assessment of tourism and recreation effects.

28.5.2 Commitments

28.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to avoid and (where avoidance is not possible) reduce the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments

Register (Annex 3.A). Those of relevance to socioeconomics, tourism and recreation are described in Table 28.2 below.

- 28.5.2.5 In addition, the Applicant proposes to adopt measures that will enhance the socio-economic benefits realised by the local communities through job opportunities and provision of services. These are also presented in Table 28.2 below.
- 28.5.2.6 The Applicant is committed to implement these measures and will also adhere to various standard sectoral practices and procedures (for example maintaining high health and safety standards). It is therefore considered that these measures are inherently part of the design of the Proposed Development and hence have been considered in the judgments as to which impacts will have LSE or no LSE.
- 28.5.2.7 It should be noted that these commitments may evolve over the development process as the EIA progresses and in response to consultation.

Table 28.2: Relevant commitments to socioeconomics, tourism and recreation.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent condition(s).	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co18	Development of a Skills and Employment Plan.	Consent condition(s).	Sets out the socio-economic improvements such as increased employment and training opportunities which have the potential for beneficial effects.
Co23	Development of, and adherence to, a PAMP, incorporating a PRoW Strategy.	Consent condition(s).	Sets out the management of access during construction. Where temporary disruption of public access cannot be avoided, suitable diversions will be implemented with appropriate signage.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent condition(s).	To minimise land take while ensuring access at ground level can be maintained.
Co49	Development of a Supply Chain Strategy to identify and follow-up on opportunities for companies based on, or operating in, the local supply chain.	Consent condition(s).	To maximise the ability of local companies and workers to access employment opportunities from the Proposed Development.

28.5.3 Approach to assessment of likely significant effects

- 28.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on socioeconomics, tourism and recreation at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA.

It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

28.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan Process.

28.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 28.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on socioeconomics, tourism and recreation based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified socioeconomics, tourism and recreation lead.

28.6 Proposed approach to the EIA

28.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on socioeconomics, tourism and recreation associated with the Proposed Development that have (or do not have) the potential to result in LSE.

28.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 28.7.2 and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 28.7.3.

28.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

28.6.1.7 For socioeconomics, tourism and recreation, the assessment of impacts will also follow specific guidance. This is further detailed within section 28.7.3 below.

28.6.1.8 It is proposed that decommissioning activity is too distant in the future to conduct a meaningful assessment of socio-economic, tourism and recreation impacts, especially regarding economic modelling of jobs and GVA.

28.6.1.9 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the

change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

28.7 Post-scoping

28.7.1 Overview

28.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For socioeconomics, tourism and recreation, the scoping study has identified:

- Seven impacts which have the potential to result in No LSE; and
- Eleven impacts which have the potential to result in LSE.

28.7.2 No LSE and next steps

28.7.2.4 Additional justification for no LSE by may be provided in a position note detailing further evidence and examples from other wind farm projects. This would be presented as part of the Evidence Plan Process. For instance, the approach to assessing demographic impact would be to consider the increase in non-local workers for the construction and operational phases and compare this to the baseline population for the Isle of Man. It is estimated that this increase would be below 100 workers per annum for both construction and operational phases and therefore would represent an approximate 0.1% increase in the Isle of Man's population. More detail and an explanation of underlying assumptions can be provided as part of the Evidence Plan Process.

28.7.2.5 During decommissioning all socio-economic, tourism and recreation impacts which have been assessed as having both LSE and no LSE during the construction and operational phases have been assessed as having no LSE. This is because socio-economic, tourism and recreation effects arising from decommissioning works are likely to be of a similar nature, but smaller scale and geographical extent, to construction.

28.7.3 LSE and next steps

Supporting studies

28.7.3.4 Supporting studies will be drawn upon for the assessment of economic benefits. Costs will be estimated using cost per megawatt (MW) benchmarks found in the 'Guide to an Offshore wind farm' (Crown Estates, 2019) and adjusted as necessary to reflect the specifics of the Proposed Development and changes in the industry since 2019.

28.7.3.5 A literature review will be undertaken for the ES of published studies of the impacts on tourism arising from the presence and development of offshore wind farms. Relevant studies that have been undertaken will be used to help predict the likely effects of the Proposed Development on tourism. This will include a literature review of c. 20 studies including studies undertaken on behalf of government or devolved administrations, academic studies and surveys which provide evidence of attitudes to offshore wind farms.

28.7.3.6 Targeted consultations with offshore recreation receptors (for example yacht, recreational angling and scuba diving clubs) will be undertaken to gather further evidence on potential effects on the enjoyment of offshore recreation.

Assessment Methodology

28.7.3.7 The EIA will assess the potential impacts on socioeconomics, tourism and recreation identified in the Impacts Register (Annex 5.B).

- 28.7.3.8 As outlined Chapter 5, EIA Methodology, the significance of an effect is a function of the magnitude of an impact and the sensitivity of the receptor.
- 28.7.3.9 In order to aid clear and robust identification of significant effects, specific and targeted criteria for defining the magnitude of impacts have been developed for this assessment based on professional experience from other similar projects. The magnitude of an impact reflects the level of change relative to baseline conditions and/ or whether the change would affect a large proportion of the existing resident population or would result in a major change to existing patterns of use. These impacts can be beneficial, adverse or neutral.
- 28.7.3.10 For socioeconomics, tourism and recreation, impact magnitude will be determined by considering the estimated deviation from baseline conditions once commitments are taken into consideration. The criteria used for the assessment of magnitude is evaluated as either high, medium, low or negligible, and are set out in more detail below.
- 28.7.3.11 Receptor sensitivity will be based on its importance or scale and the ability of the baseline to absorb or be influenced by the identified effects.
- 28.7.3.12 The proposed method for assessment, based on the methodology used on OWF projects of similar size in the UK, is detailed below and will take into consideration any matters raised in this scoping exercise. The assessment will:
- Consider the legislation, guidance and policy context and relevance of this to the assessment, including cross reference to sections of the assessment which address or relate to specific legislation, guidance and policy;
 - Review socio-economic, tourism and recreation baseline conditions within the relevant Study Areas;
 - Assess the likely scale, scope, permanence and significance of identified effects, taking account of any embedded environmental or social measures (detailed within the commitments register) proposed within the Proposed Development;
 - Recommend commitments, where appropriate; and
 - Assess cumulative effects of the scheme with other proposed schemes.
- 28.7.3.13 Where appropriate, a quantitative assessment will be undertaken which will consider the percentage change on baseline conditions. For instance assessment of GVA and employment impacts would use the following thresholds:
- Below 0.1% would be a negligible impact;
 - Between 0.1% and 0.5% would be a low impact;
 - Between 0.5% and 1% would be a medium impact; and
 - A % change above 1% would be a high impact.
- 28.7.3.14 These thresholds are based on the professional judgement of the assessors and have been applied on the assessments of other offshore wind farms across the UK.
- 28.7.3.15 The sensitivity of socioeconomics, tourism and recreation receptors will be determined by an assessment of the importance of the receptor to socio-economic conditions in the Isle of Man based on policy priority, need and its ability to accommodate change.
- 28.7.3.16 With regards to the assessment methodology the following points are particularly pertinent:

- A quantitative assessment will be undertaken to assess impacts related to employment and GVA. The assessment will be based on the change in Isle of Man direct and indirect employment and GVA relative to all Isle of Man employment and GVA during the construction and operational phases of the Proposed Development. Key to this will be assumptions on the location of suppliers. Jobs and GVA related to non-Isle of Man based suppliers will not be included as these are located outside the Study Areas. Quantitative modelling will be undertaken of the effects of increased spending in the local economy due to the construction and operation of the Proposed Development. The modelling will take account of expenditure within the Isle of Man (on Isle of Man suppliers) arising from direct investment in goods and services, and the multiplier effects arising from increased spending. Inputs into the economic model will make use of estimates of expenditure provided by the Applicant based on the team's experience within the UK and/ or industry benchmarks on expenditure levels per MW. A qualitative assessment will be conducted for the decommissioning phase.
- An assessment will be undertaken of the potential export income that the operation of the Proposed Development could enable through the wind value chain. This will be a qualitative assessment due to the lack of information/ uncertainty around the potential use of wind electricity as an export.
- Qualitative assessments will be conducted for tourism, recreation and social infrastructure related effects.

28.7.3.17 A statement of residual effects, following consideration of any specific commitments, will be provided.

28.7.3.18 It is proposed that a standalone chapter will be included in the assessment of effects (both onshore and offshore) on socio-economic, tourism and recreation.

28.7.3.19 The Transboundary Screening (Annex 5.D) has identified that transboundary effects are unlikely to occur on socio-economic, tourism and recreation receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will not be considered further within the EIA.

28.7.3.20 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on socio-economic, tourism and recreation receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

28.8 Questions to Consultees

- Question 28.1: Do you agree with the Study Areas that has been identified for socioeconomics, tourism and recreation?;
- Question 28.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 28.3: Do you agree that all impacts/ effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 28.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to socioeconomics, tourism and recreation?;

- Question 28.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 28.6: Do you have any specific requirements for the economic modelling methodology?;
- Question 28.7: Are local economic multipliers available at the level of the Isle of Man?;
- Question 28.8: Are there examples of measures adopted for similar developments in the Isle of Man which have sought to enhance economic benefits? If so, could you provide details?;
- Question 28.9: Given the uncertainty around the level of local sourcing within the Isle of Man, would you agree that the economic benefits (jobs and GVA) should be represented as a range, but with the lowest likely scenario representing a "worst case" assessment of benefits?; and
- Question 28.10: Do you agree that decommissioning is an activity too distant in the future to conduct a meaningful assessment of socio-economic impacts, especially in regarding to economic modelling of jobs and GVA?

29 Major Accidents & Disasters

29.1 Introduction

- 29.1.1.1 This Chapter of the Scoping Report identifies the impacts of relevance to Major Accidents and Disasters (MA&D) from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on MA&D receptors.
- 29.1.1.2 A major accident is defined by IEMA and Arup in their “Major Accidents and Disasters in EIA: A Primer” as *“an event (for instance, train derailment or major road traffic accident) that threatens immediate or delayed serious environmental effects to human health, welfare and/ or the environment and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage”* (IEMA and ARUP, 2020).
- 29.1.1.3 In line with the Primer, this Chapter is a signposting Chapter and does not propose to carry any impacts through to assessment, see section 29.6 for further details. Therefore, this Chapter should be read in conjunction with the following Chapters:
- Chapter 10, Benthic Subtidal & Intertidal Ecology, which assesses the possible effects on prey resources and habitat;
 - Chapter 12, Fish & Shellfish Ecology, which assesses the possible effects on prey resources and habitat;
 - Chapter 14, Shipping & Navigation; which assesses the potential effects on shipping and navigation receptors;
 - Chapter 17, Military & Civil Aviation, which considers Practice and Exercise Areas (PEXA) and helicopters associated with the offshore oil and gas industry;
 - Chapter 18, Other Marine Users & Activities, which provides further assessment of resulting effects on other marine users and activities receptors;
 - Chapter 19 Onshore Ecology, which further explains the likelihood of resulting effects on valued ecological features;
 - Chapter 20, Land Use & Ground Conditions, which identifies the resulting effects on land use and ground conditions receptors;
 - Chapter 21, Traffic & Transport, which provides the scope of assessment for the traffic and transportation onshore elements of the Proposed Development;
 - Chapter 24, Air Quality, which considers the likelihood of resulting effects on air quality receptors;
 - Chapter 25, Hydrology, Hydrogeology & Flood Risk, which considers the likelihood of resulting effects on hydrological receptors;
 - Chapter 27, Climate Change, which provides assessment on effects from greenhouse gases (GHG) and climate resilience on the Proposed Development; and
 - Chapter 30, Human Health & Wellbeing, which provides assessment on the potential effects on human health and wellbeing.

29.1.1.4 These chapters outline the proposed measures to prevent or mitigate significant effects and details of the preparedness for, and proposed response to MA&D relevant to the construction, operation and decommissioning of the Proposed Development.

29.2 Legislation, policy and guidance

29.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:

- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
- Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.

29.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

29.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to MA&D. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.

29.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

29.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

29.2.2 Legislation

National legislation

29.2.2.4 With regards to MA&D, the following Isle of Man legislation is considered:

- Health and Safety at Work etc. Act 1974 (HSWA);
- The Management of Health and Safety at Work Regulations 2003; and
- The Construction (Design and Management) Regulations 2003.

International legislation and agreements

- 29.2.2.5 In addition to the above, this Chapter will also consider the 2014/52/EU EIA Directive (the EIA Directive). Whilst not directly applicable in the Isle of Man, MA&D is an EIA topic introduced by the 2014/52/EU EIA Directive (the EIA Directive). The EIA Directive was transposed into UK legislation in 2017 by various separate pieces of legislation applicable to different consenting regimes, including but not limited to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
- 29.2.2.6 Finally, it is important to note that the EIA Directive update was to ensure efforts are not duplicated, reinforcing the need for proportionality. It further states: *"In order to avoid duplications, it should be possible to use any relevant information available and obtained through risk assessments carried out pursuant to Union legislation, such as Directive 2012/18/EU of the European Parliament and the Council (13) and Council Directive 2009/71/Euratom (14), or through relevant assessments carried out pursuant to national legislation provided that the requirements of this Directive are met"* (Paragraph 15 of Directive 2014/52/EU).
- 29.2.2.7 Schedule 4 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 states the requirement of significant risks to the receiving communities and environment, for example, through MA&D, to be considered. Similarly, significant effects arising from the vulnerability of the Proposed Development to MA&D must also be considered as part of the EIA process.

29.2.3 Policy

National policy

- 29.2.3.4 Within the Isle of Man Strategic Plan 2016, the policy which is of relevance to MA&D are:
- Environment Policy 29 relates to Consultation Zones for Hazardous Installations as such installations represent a constraint on development because of health and safety considerations. One such installation is the petroleum and liquefied petroleum gas (LPG) storage at Douglas Harbour, which is located within the Study Area, see Figure 29.1. The type of constraint posed to development varies by facility and therefore there will be a need for the DoI to consult with the Health and Safety at Work Inspectorate regarding any development within such zones.

International policy

- 29.2.3.5 Due to adequate national policy, no international policy has been considered for MA&D.

29.2.4 Guidance

National guidance

- 29.2.4.4 There are no guidance documents prepared centrally by the Isle of Man Government for the assessment of MA&D.

International guidance

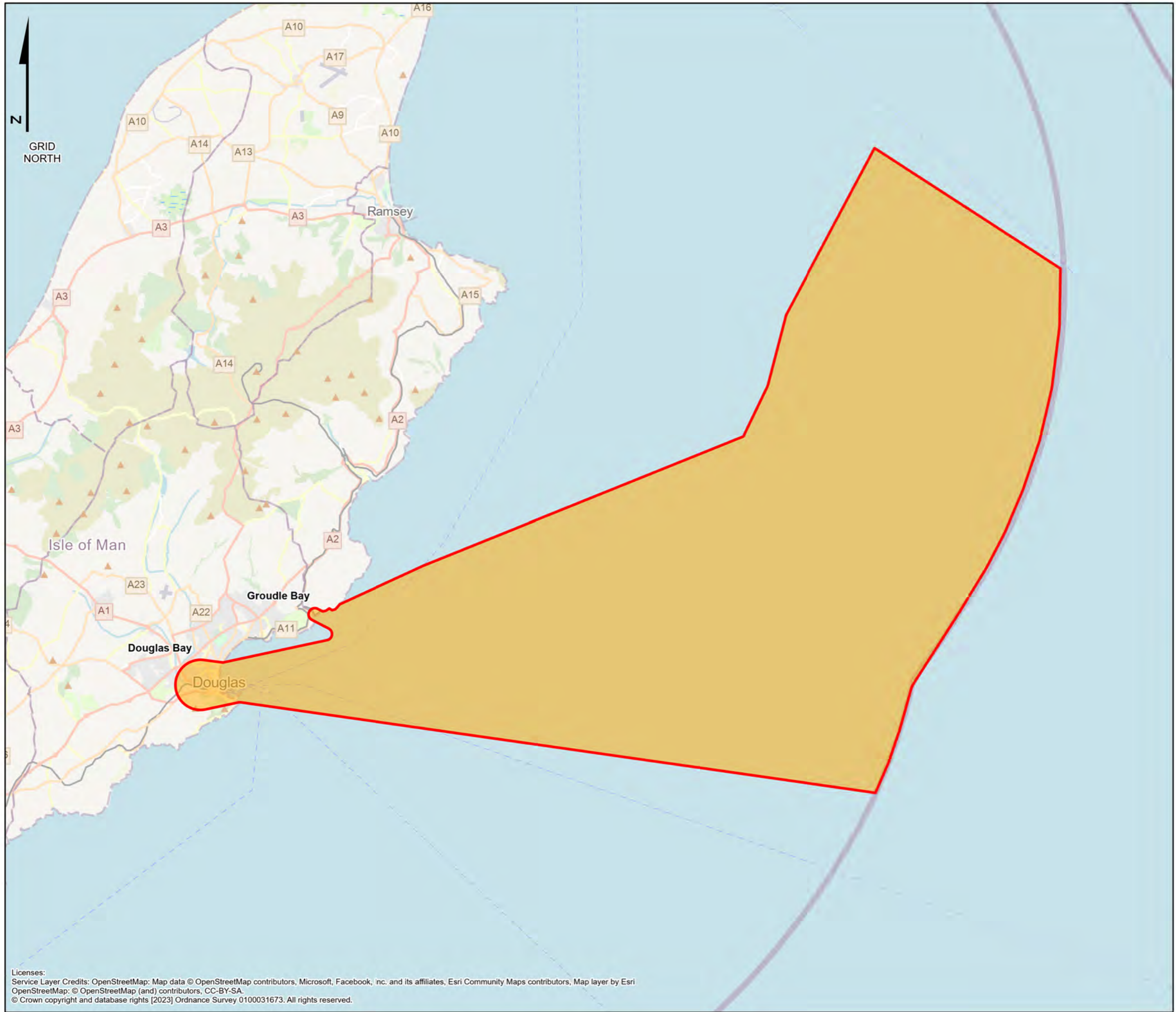
- 29.2.4.5 UK guidance documents have been used in lieu of domestic guidance. The following documents relate to established best practice for the assessment of MA&D within the development control process:

- DMRB LA104 (section 4.9 - 4.12) Environmental Assessment and Monitoring (Highways England, 2020); and
- Major Accidents and Disasters in EIA: A Primer (IEMA and ARUP, 2020).

29.3 Study Area

29.3.1.4 The Scoping Study Area is shown in Figure 29.1. Landfall will be made at either Douglas or Groudle Bay. The Scoping Study Area also includes a Terrestrial Electrical Connection Cable from landfall in Douglas to the Onshore Substation (OnSS) located within Douglas.

29.3.1.5 A full description of the Proposed Development is provided in Chapter 3, Project Description.



Moor Vannin

Figure 29.1
Major Accidents and Disasters
Study Area

- Scoping Boundary
- Major Accidents and Disasters Study Area



Coordinate System: British National Grid
 Scale@A3: 1:150,000

0 1 2 4 6 8 Kilometres

0 0.5 1 2 3 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

Figure 29.1 Major Accidents and Disasters Study Area
 Document no: 404.011945.00001.0034.0
 Created by: FGI
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29.4 Baseline

29.4.1 Overview of baseline

29.4.1.4 The baseline conditions will be defined within other topic Chapters (see section 29.4.2) and can be split into three main areas:

- Potential environmental receptors;
- Major accident installations within the defined Study Area; and
- Natural hazards and disasters.

29.4.1.5 A summary of receptors related to these three areas and where they are addressed within this Scoping Report are set out below in section 29.4.2.

29.4.2 Summary of key receptors

29.4.2.4 Examples of key receptors and impacts linked to MA&D covered by other topic chapters are listed below and described in detail within each Chapter:

- Chapter 10, Benthic Subtidal and Intertidal Ecology, Chapter 12, Fish & Shellfish Ecology, and Chapter 19, Onshore Ecology.
 - Receptors: Designated areas, freshwater and marine habitats, flora and fauna
 - Impacts: Direct and indirect seabed disturbances, collisions with birds, and permanent and/or long-term habitat loss/alteration due to the addition of infrastructure to the area.
- Chapter 14, Shipping & Navigation;
 - Receptors: Vessels
 - Impacts: Snagging of vessels on offshore Array Cables, navigational safety.
- Chapter 17, Military & Civil Aviation;
 - Receptors: Aircraft
 - Impacts: Risk of collision with wind turbines.
- Chapter 18, Other Marine Users & Activities; and
 - Receptors: Morgan offshore wind farm and Walney extension offshore wind farm.
 - Impacts: Hazardous Installations (Consultation Zones for installations such as the petroleum and LPG storage at Douglas Harbour).
- Chapter 20, Land Use & Ground Conditions;
 - Receptors: Soil and sediment.
 - Impacts: Major spillages and contamination.
- Chapter 21, Traffic & Transport;
 - Receptors: Road and local transport users.
 - Impacts: Road traffic accidents, movement of vehicles adjacent to public rights of way during construction, operation, and decommissioning
- Chapter 24, Air Quality;

- Receptors: Terrestrial protected sites and residents
- Impacts: Dust and emissions from construction traffic.
- Chapter 25, Hydrology, Hydrogeology & Flood Risk;
 - Receptors: Groundwater and watercourses.
 - Impacts: Impacts related to flood events.
- Chapter 27, Climate Change;
 - Receptors: Onshore and offshore infrastructure and the atmosphere (relating to the lifecycle impact of GHG emissions resulting from the construction, operation and decommissioning of the Proposed Development).
 - Impacts: Extreme weather.
- Chapter 30, Human Health & Wellbeing;
 - Receptors: Residents, tourists, onshore and offshore workers
 - Impacts: Failure of onshore and offshore cables, manual handling, falls of persons from heights, contact with live electrical conductors, slips trips and falls.

29.4.3 Future baseline

29.4.3.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

29.5 Identification of impacts and effects

29.5.1 Key parameters for assessment

- 29.5.1.4 The MA&D scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:
- Landfall: this contains the Transition Joint Bays (TJBs) and jointing bays (JBs). These are underground concrete structures that house the joint between the offshore and onshore export cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
 - Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Onshore Substation (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
 - Offshore Electrical Connection Study Area and the Offshore Array: this will contain all Offshore Infrastructure and associated works.
 - Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to

the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of 1 main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45 m x 80 m with a max height of 25m.

29.5.2 Commitments

29.5.2.4 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to MA&D are described in the commitments section within each topic chapter.

29.5.2.5 Topic Chapters listed within section 29.4.2 will identify the potential impacts that could result in a MA&D, whether they are potential pathways to receptors that could cause a significant environmental effect and whether existing design measures, legal requirements, codes and standards adequately control the potential major accident. This process is set out within the Primer (IEMA and Arup, 2020), shown in Figure 29.2.

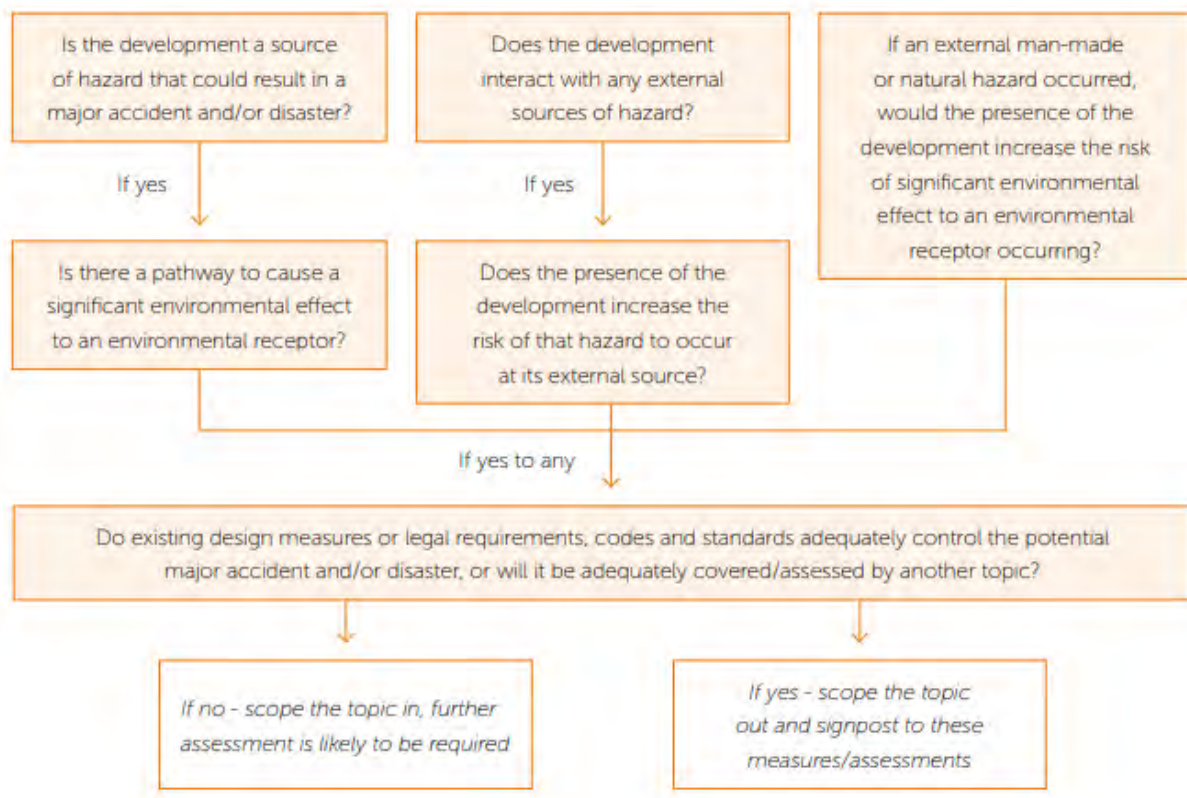


Figure 29.2: MA&D Scoping Decision Process, Source: IEMA and ARUP, 2020.

29.5.2.6 A key consideration within the Primer is *“Do existing design measures or legal requirements, codes and standards adequately control the potential major accident and/or disaster, or will it be adequately covered/ assessed by another topic?”*.

29.5.2.7 As set out in section 29.4.2, receptors, impacts and LSE related to MA&D will be adequately addressed in other topic chapters which take into account design measures, legal requirements and standards when considering impacts related to MA&D. Impacts addressed in other Chapters will be included within the Impacts

Register (Annex 5.B) . Identified commitments are subject to further environmental assessment, scheme development and stakeholder engagement and consultation.

29.5.3 Approach to assessment of likely significant effects

29.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on MA&D at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach where no LSE is concluded.

29.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.

29.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects related to MA&D based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement.

29.6 Proposed approach to the EIA

29.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on MA&D associated with the Proposed Development that have (or do not have) the potential to result in LSE. As detailed in section 29.1, this Chapter has identified topics which have the potential to result in an impact upon MA&D and has provided a 'signpost' to these Chapters.

29.6.1.5 To avoid duplication of LSE the proposed approach to the EIA for MA&D is to provide an assessment of LSE within the signposted chapters. Therefore, a separate MA&D chapter is not required for the next stage of the EIA process. The potential LSE of the Proposed Development on the receiving environment will be identified within the relevant topic Chapters. This approach to EIA for MA&D is in line with the IEMA Guidance: Major Accidents and Disasters in EIA: A Primer (IEMA and Arup 2020) as set out in section 29.5.2.

29.7 Questions to Consultees

- Question 29.1: Do you agree with the Study Area that has been identified for MA&D?
- Question 29.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?
- Question 29.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 29.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to MA&D?;

- Question 29.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?;
- Question 29.6: Do you agree with the proposed approach to this Chapter that all potential impacts and receptors are covered elsewhere in the other referenced chapters and therefore no further assessment methodology is included within this Chapter?;
- Question 29.7: Do you agree that the proposed approach to EIA is sufficiently set out to enable you to conclude a position of no LSE before the submission of the application?;
- Question 29.8: Do you agree that all relevant legislation, policy and guidance has been considered?; and
- Question 29.9: Are there any receptors that the Applicant has not yet identified that you feel should be considered?

30 Human Health & Wellbeing

30.1 Introduction

- 30.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to human health and wellbeing from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on human health and wellbeing receptors.
- 30.1.1.2 This Chapter is a signposting Chapter and does not propose to carry impacts through to assessment, see section 30.6 for further details. Therefore this Chapter should be read in conjunction with the following Chapters:
- Chapter 20, Land Use and Ground Conditions, which provides the scope the scope of assessment for Land Use and Ground Conditions;
 - Chapter 21, Traffic and Transport, which provides the scope of assessment for the traffic and transportation onshore elements of the Proposed Development;
 - Chapter 23, Noise & Vibration, which provides the scope of assessment for potential effects on onshore sensitive noise and vibration receptors;
 - Chapter 24, Air Quality, which provides the scope of assessment for potential effects on air quality receptors;
 - Chapter 25, Hydrology; Hydrogeology & Flood Risk, provides the scope of assessment for potential effects on hydrology, hydrogeology and flood risk receptors; and
 - Chapter 28, Socio-Economics, Tourism & Recreation, provides the scope of assessment for potential effects on socio-economic and tourism receptors.
- 30.1.1.3 Exposure to EMF is also a consideration for human health, however all aspects of the Proposed Development will be designed in accordance with strict industry guidelines that ensure the protection of human health from EMF. Any guidance that has been used has been listed in section 30.2.4.
- 30.1.1.4 The Proposed Development is also expected to provide employment opportunities and economic benefits that may make positive contributions to human health and wellbeing.

30.2 Legislation, policy and guidance

- 30.2.1.1 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 30.2.1.2 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single

ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

- 30.2.1.3 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to human health and wellbeing. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 30.2.1.4 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.
- 30.2.1.5 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

30.2.2 Legislation

National legislation

- 30.2.2.1 With regards to human health, the following Isle of Man legislation is considered, in addition to the legislation identified within the relevant related topic chapters as described in paragraph 30.1.1.2:
 - Health and Safety at Work etc. Act 1974 (HSWA); and
 - The Management of Health and Safety at Work Regulations 2003.

International legislation and agreements

- 30.2.2.2 Regulation 5(2) and paragraph 4 of Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 states that EIAs must identify, describe and assess the direct and indirect potentially significant effects of a proposed development on several factors including human health. This generally takes the World Health Organisation's (WHO) definition of human health, which is *"a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity"*.

30.2.3 Policy

National policy

- 30.2.3.1 The Isle of Man Strategic Plan 2016 states that in terms of pollution, it is important that the Planning Directorate operates alongside other agencies such as the Environment Safety and Health Directorate which has statutory responsibilities regarding environmental protection, and the Health and Safety at Work Inspectorate.
 - Environment Policy 29 relates to Consultation Zones for Hazardous Installations, which represent as such installations represent a constraint on development because of health and safety considerations. One such installation is the

petroleum and liquefied petroleum gas (LPG) storage and Douglas Harbour, which is located within the Study Area shown in Figure 30.1.

- Environment Policy 26 states that *“development will not be permitted on or close to contaminated land unless it can be demonstrated that there is no unacceptable risk to health, property or adjacent watercourses”*.

International policy

- 30.2.3.2 The EIA will also be informed by relevant parts of the England and Wales NPS (Department for Energy and Climate Change (DECC), 2011a, 2011b and 2011c), Draft NPSs (DESNZ, 2023a, 2023b and 2023c) and the UK Marine Policy Statement (Department of Environment, Food and Rural Affairs (DEFRA), 2011) in accordance with the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016b). This Plan states that until such point that a Planning Policy Statement that addresses how the DoI would address applications subject to EIAs is published, current practice from England and Wales should be followed.
- 30.2.3.3 NPS EN-1 states, in paragraph 4.13.2, that where the Proposed Development has an effect on human beings, the ES should assess these effects for each element of the Proposed Development, identifying any adverse health impacts, and identifying measures to avoid, reduce or compensate for these impacts as appropriate. NPS EN-1 indicates that direct impacts on human health may include increased traffic, air or water pollution, dust, odour, hazardous waste and substances, noise, exposure to radiation, increases in pests.
- 30.2.3.4 Guidance specifically relating to electricity networks infrastructure is provided in the draft NPS for Electricity Networks Infrastructure (NPS EN-5) (DECC, 2023b). This policy focuses on guidance primarily in relation to overhead lines and is therefore largely not applicable to the Proposed Development as all export transmission cables from the offshore array, through to the landfall location and onward to the Onshore Substation (OnSS) are expected to be buried.

30.2.4 Guidance

National guidance

- 30.2.4.1 There are no guidance documents prepared centrally by the Isle of Man Government for the assessment of human health and wellbeing.

International guidance

- 30.2.4.2 UK guidance documents have been used in lieu of domestic guidance. This includes the following:
- DMRB LA 112 Population and Human Health Revision 1 (Highways England, 2020);
 - Health in Environmental Impact Assessment: A Primer for a Proportionate Approach (Cave *et al.*, 2017);
 - Health Impact Assessment in spatial planning (Public Health England, 2020);
 - Determining Significance for Human Health in Environmental Impact Assessment (IEMA, 2022);
 - Effective Scoping of Human Health in Environmental Impact Assessment (IEMA, 2022); and
 - Environment Agency's Pollution Prevention Guidance (PPG) notes.

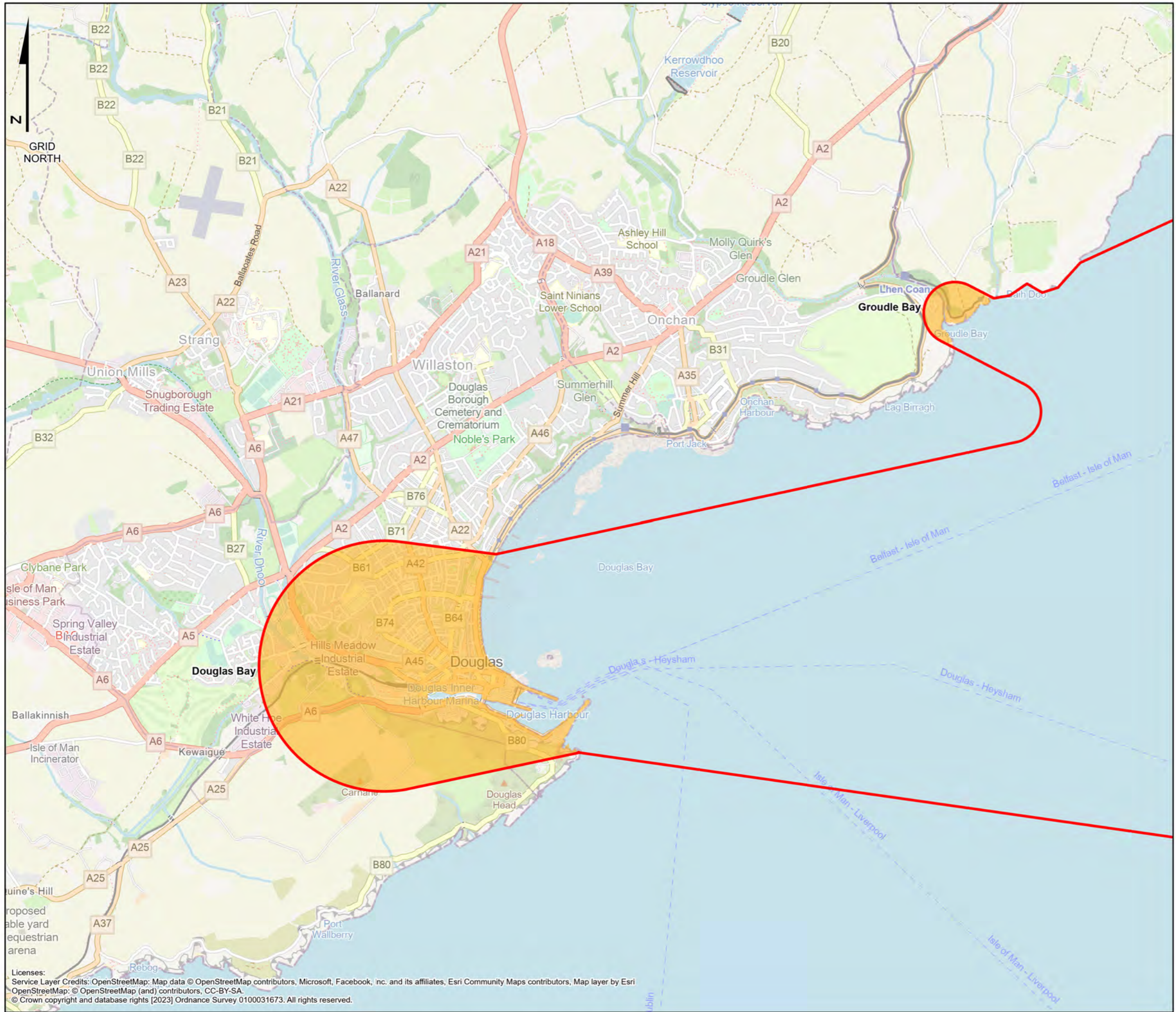
30.2.4.3 EMF Guidance includes:

- Guidelines on Limits of Exposure to Static Magnetic Fields (International Commission on Non-Ionizing Radiation Protection (ICNIRP), 1994); 2010.
- Guidelines for Limiting Exposures to Time-Varying Electric, Magnetic and Electromagnetic Fields (Up to 300GHz) (ICNIRP, 1998);
- ICNIRP Guidelines on Limits of Exposure to Static Magnetic Fields (ICNRP, 2009) and
- Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz to 100 kHz) (ICNIRP, 2010).

30.3 Study Area

30.3.1.1 The Study Area for the human health assessment is shown in Figure 30.1. Landfall will be made at either Douglas or Groudle Bay. The Study Area at Douglas also includes a Terrestrial Electrical Connection Cable Route from landfall in Douglas to the new OnSS located within Douglas.

30.3.1.2 A full description of the Proposed Development is provided in Chapter 3, Project Description.



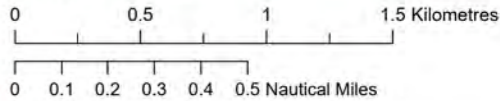
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Figure 30.1
Human Health and Wellbeing
Study Area

- Scoping Boundary
- Human Health and Wellbeing Study Area



Coordinate System: British National Grid
Scale@A3: 1:30,000



REV	REMARK	DATE
00	Issued for Scoping	10/10/2023

Figure 30.1 Human Health and Wellbeing Study Area
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30.4 Baseline

30.4.1 Overview of baseline

- 30.4.1.1 The 2021 Isle of Man Census showed that the Isle of Man's resident population was 84,069, with over 26,000 living in the capital, Douglas (Isle of Man Gov, 2022). The Census sets out that the average age of residents across the Isle of Man has continuously risen over the last decade and has resulted in the resident population skewing towards higher age bands, with 50% of the population being older than 46.5 years and 22% over the age of 64 (Isle of Man, 2022).
- 30.4.1.2 In 2020, the average life expectancy of men in the Isle of Man was 78.6 years and for women it was 82.6 years (Isle of Man Gov, 2022). The Isle of Man's Mortality Report 2020 showed that a total of 917 deaths were registered in the Isle of Man in 2020, this figure shows a 9.2% increase on the previous figure in 2019 (840) (Isle of Man Gov, 2022). This increase cannot be attributed to COVID-19 and the report states that *"COVID-19 related deaths do not feature as one of the main causes of death and are not statistically significant enough to have affected our overall mortality rates"*. The overall population is increasing in size and age over time. Demographics are considered further in Chapter 28, Socio-Economics & Tourism.
- 30.4.1.3 The Isle of Man Health and Lifestyle Survey 2019, conducted by the Public Health Institute (PHI) at Liverpool John Moores University aimed to *"examine the general health and wellbeing amongst the Island's adult population"* (PHI, 2021). In total 3,122 adults took part in the surveys which equates to 4.7% of the Isle of Man adult population. Key findings from the survey showed that:
- 72.3% of survey participants had very good/ good self-reported general health;
 - 28.2% of participants had high mental wellbeing;
 - 7.9% of participants have a poor diet;
 - 64.3% of all adults being classified as either overweight or obese;
 - 3.96% of participants were classified as having low physical activity (defined by the survey as taking part in less than 2.5 hours of physical activity in a week);
 - 8.4% of participants took part in daily tobacco smoking and 2.4% of participants use e-cigarettes daily; and
 - 18.2% of participants drank above the recommended weekly limit for alcohol.

30.4.2 Data sources

- 30.4.2.1 The data sources that have been used to inform the baseline characterisation and identification of key receptors are identified in Table 30.1.

Table 30.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
2021 Isle of Man Census Report (Isle of Man Government, 2022)	A report detailing the population figures, employment, and economic statistics of the Isle of Man. Data was collected in 2021 and results published in June 2022.	Isle of Man
Mortality Report 2020 (Isle of Man Government, 2022)	A report written by the Isle of Man Government that provides an	Isle of Man

Source	Summary	Coverage of the Study Area
	overview of mortality rates from 2006-2020 in the Isle of Man.	
Isle of Man Health and Lifestyle Survey 2019 (Public Health Institute, 2021)	A survey conducted to examine the general health and wellbeing of the Isle of Man adult population. The Isle of Man Government have a rolling programme of health and lifestyle surveys to ensure that there is an up-to-date database on the health of the population. The data used was collected in 2019 and published in September 2021.	Isle of Man

30.4.3 Summary of key receptors

30.4.3.1 Examples of key receptors and impacts linked to human health and wellbeing are covered by other chapters of the scoping report, for example, Chapter 20, Land Use and Ground Conditions (loss of green space), Chapter 21, Traffic and Transport (delays to existing routes), Chapter 23, Noise & Vibration (operational noise of the substation), Chapter 24, Air Quality (dust particulates and exhaust emissions), Chapter 25, Hydrology, Hydrogeology & Flood Risk (mobilization of contaminants) and Chapter 28, Socio-Economics, Tourism and Recreation (severance of access routes).

30.4.3.2 As such, there are no other specific receptors considered within this topic.

30.4.4 Further data collection to be undertaken

30.4.4.1 Existing baseline statistics has been obtained from publicly available data, such as from the Isle of Man Government (i.e., census data) to provide information on population health (both general and hard to reach groups) within the onshore Study Areas. Further data collection is set out within the chapters listed in section 30.1.1.2.

30.4.5 Future baseline

30.4.5.1 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

30.5 Identification of impacts and effects

30.5.1 Key parameters for assessment

30.5.1.1 The human health and wellbeing scoping is based on the construction, operation and maintenance and decommissioning of the following project infrastructure:

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).

- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Onshore Substation (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
- Offshore Electrical Connection Search Area and the Offshore Array: this will contain all offshore infrastructure and associated works. It should be noted that offshore parameters related to human health are also considered in other chapters: see Chapter 8, Marine Water & Sediment Quality, Chapter 23, Noise & Vibration and Chapter 24, Air Quality).
- Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45 m x 80 m with a max height of 25m.

30.5.1.2 For further details on these elements see Chapter 3, Project Description.

30.5.2 Commitments

30.5.2.1 As part of the iterative project design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further details on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to human health and wellbeing are described in Table 30.2 below.

Table 30.2: Relevant commitments to human health and wellbeing.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of decommissioning programme.	Consent Condition(s)	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project.
Co17	Development and implementation of a CEMP.	Consent Condition(s)	Sets out onshore commitments measures during onshore construction, including details of the timings of onshore works.
Co18	Development of a Skills and Employment Plan.	Consent Condition(s)	Socio-economic improvements such as increased employment and training opportunities have the potential for positive health effects.
Co19	Development of, and adherence to, a Code of Construction Practice (CoCP).	Consent Condition(s)	Sets out the principles for commitments and management measures during onshore construction.

ID	Measure proposed	How this measure will be secured	Rationale
Co21	The onshore electrical cables will be buried underground for their entire length.	Consent Condition(s)	To minimise the effects of land loss, and impacts to soils and geology.
Co24	Ørsted's Health, Safety and Environment (HSE) policies will be adhered to throughout the pre-construction, construction and operation and maintenance (O&M) phases of the Proposed Development.	Consent Condition(s)	Ørsted has a focus on employee safety and its HSE policy ensures that Ørsted's wind farms are safe by design and that the processes and procedures are adhered to. There is a clearly defined safety culture in place in order to avoid incidents and accidents. There will be constant controls to ensure that the safety measures are observed and followed and the Applicant has built a safe workplace for its employees and contractors.
Co46	Burial of onshore cable joint bays, with the land above re-instated to former use, except in the instance of link box chambers where access will be required from ground level.	Consent Condition(s)	To minimise land take while ensuring access at ground level can be maintained.
Co48	Core working hours for the onshore components will be 07:00 to 19:00 Monday to Friday, and 08:00 to 13:00 on Saturdays, except for specific circumstances where longer working hours are required as set out in the CoCP unless otherwise notified by the Applicant.	Consent Condition(s)	To reduce the overall impact and disruption to people outside working hours.

30.5.2.2 Please note that an outline Employment and Skills Plan has not yet been produced. However, these will be produced prior to application submission.

30.5.2.3 As set out in section 30.1.1.2, receptors, impacts and LSE related to human health and wellbeing will be adequately addressed in other topic chapters which take into account design measures, legal requirements and standards when considering impacts related to human health and wellbeing. Impacts addressed in other chapters will be included within the Impacts Register (Annex 5.B). Identified commitments are subject to further environmental assessment, scheme development and stakeholder engagement and consultation.

30.5.3 Approach to assessment of likely significant effects

30.5.3.1 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on human health and wellbeing at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a

basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

30.5.3.2 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the Proposed Development progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.

30.5.3.3 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 30.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on human health and wellbeing based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified human health and wellbeing lead.

30.6 Proposed approach to the EIA

30.6.1.1 This Chapter of the Scoping Report has identified the potential impacts on human health and wellbeing associated with the Proposed Development that have (or do not have) the potential to result in LSE. As detailed in section 30.1.1.2, this Chapter has identified topics which have the potential to result in an impact upon human health and wellbeing and has provided a 'signpost' to these chapters.

30.6.1.2 The Impacts Register (Annex 5.B) identifies the potential impacts on human health and wellbeing associated with the Proposed Development that have (or do not have) the potential to result in LSE.

30.6.1.3 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 30.7.2; and
- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 30.7.3.

30.6.1.4 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

30.7 Post Scoping

30.7.1 Overview

30.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For human health and wellbeing the scoping study has identified:

- Thirteen impacts which have the potential to result in No LSE; and
- Five impacts which have the potential to result in LSE.

30.7.2 No LSE and Next Steps

30.7.2.4 As detailed above the human health and wellbeing chapter is a signposting chapter. Where we have identified the potential for no LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process, this will be addressed in the appropriate technical chapter identified in the Impacts Register (Annex 5.B).

30.7.3 LSE and next steps

Supporting Studies

30.7.3.1 It is not proposed to bring forward further assessment for human health and wellbeing. Where we have identified potential for LSE this will be addressed within the appropriate technical chapter as detailed in the Impacts Register (Annex 5.B). This will avoid duplication of LSE and therefore a separate human health and wellbeing chapter is not required for the next stage of the EIA process.

Assessment Methodology

30.7.3.2 The proposed assessment methodology for human health and wellbeing is detailed within the relevant signposted Chapters.

30.7.3.3 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on other marine users and activities receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

30.7.3.4 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on other archaeology and heritage receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

30.8 Questions to Consultees

- Question 30.1: Do you agree with the Study Area that has been identified for human health and wellbeing?;
- Question 30.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 30.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 30.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to human health and wellbeing?; and
- Question 30.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

31 Materials & Waste

31.1 Introduction

- 31.1.1.1 This Chapter of the Scoping Report identifies the potential impacts of relevance to materials and waste from the construction, operation and maintenance, and decommissioning of the Proposed Development (a definition of which is provided within Chapter 3, Project Description), and considers the likelihood of resulting effects on materials and waste receptors.
- 31.1.1.2 Specifically, the assessment considers the likelihood of resulting effects from the use and management of materials on local supply chains and from the production and management of waste in the Isle of Man's waste infrastructure. Waste is defined in Article 3(1) of the European Waste Framework Directive 2008/98EC as, '*any substance or object which the holder discards or intends to discard or is required to discard.*'
- 31.1.1.3 This topic interfaces with other topics and, as such, should be considered alongside:
- Chapter 27, Climate Change, which provides assessment on effects from greenhouse gases (GHG) and climate resilience on the Proposed Development.

31.2 Legislation, policy and guidance

- 31.2.1.4 This Chapter has been prepared to support the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 31.2.1.5 As described in paragraph 1.3.1.2 of Chapter 1, Introduction, the promoter for the terrestrial infrastructure of the Proposed Development is yet to be determined and could be either the Applicant or Manx Utilities. As the promoter is yet to be determined, so is the route to consent and the exact nature of any accompanying application documents. Should the Applicant promote all aspects of the Proposed Development, it shall seek to submit a single EIA which will be presented in a single ES, in support of applications for both the MIC and planning permission under TCPA, to ensure all regulators are informed of the likely significant effects of the Proposed Development when determining the consent applications. However, if Manx Utilities become the promoter of the terrestrial infrastructure, then two separate applications may be submitted, one each from the Applicant (for the marine infrastructure) and Manx Utilities (for the terrestrial infrastructure). The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.
- 31.2.1.6 Chapter 2, Legislation, Policy & Guidance of this Scoping Report, provides detail on the overarching legislation, policy and guidance applicable to the Proposed Development. This section describes the legislation, policy and guidance specific to materials and waste. Where there is no, or limited, Manx legislation, policy or guidance, regard has been given to equivalent advice published in the UK or the EU as best practice.
- 31.2.1.7 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) anticipates the publication of specific guidance on how the DoI will address

applications subject to EIA. Pending publication of the guidance, the DoI has stated that the current practice from England and Wales should be followed.

31.2.1.8 Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.

31.2.2 Legislation

National legislation

31.2.2.4 With regards to materials and waste, the Isle of Man is governed by the following three pieces of legislation:

- The Public Health Act 1990
 - Part IV relates the refuse disposal including the licensing of disposal of waste, the collection and disposal of waste and the reclamation of waste;
- The Collection & Disposal of Waste Regulations 2000
 - These regulations define different types of waste and how they are categorised. It also identifies when a disposal licence is required; and
- The Import & Export of Waste Regulations 2001
 - These regulations set out the prohibition on import of waste, restrictions on export of waste and authorisation processes to be followed.

International legislation

31.2.2.5 In addition to the above national legislation, the following international legislation is also considered relevant to this Chapter:

- Environmental Protection Act 1990:
 - This re-enacts provisions of CoPA 1974 relating to waste on land and makes further provision in relation to waste;
- Environment Act 1995:
 - This Act makes provision for the control of pollution, the conservation of natural resources and the conservation or enhancement of the environment;
 - Imposes obligations on certain persons in respect of certain products or materials;
- Landfill Directive (1999/31/EC):
 - The Landfill Directive sets out strict operational requirements for landfill sites with the objective to protect both human health and the environment. It aims to support the EU's transition to the circular economy and also sets specific operational requirements such as permitting, waste acceptance, technical requirements in the operational and after-care phases and reporting; and
- European Waste Framework Directive (2008/98/EC):
 - The Waste Framework Directive sets the basic concepts and definitions related to waste management, including definitions of waste, recycling and recovery. The foundation of EU waste management is the five-step "waste hierarchy", established in the Waste. It establishes an order of preference for managing and disposing of waste.

31.2.3 Policy

National policy

31.2.3.4 The Waste Policy Strategy 2012-2022 introduces Dol's ambition for waste management in the Isle of Man, which can be defined as 'Toward Zero Waste'. The vision 'Towards Zero Waste' is underpinned by the following key policies:

- Provide the necessary waste infrastructure;
- Continue to be guided by the appropriate principles;
- Apply proportionate legislation, and
- Increase the efficiency and effectiveness of our waste resources taking into consideration the financial constraints facing the Island.

31.2.3.5 To successfully deliver this approach, two targets have been established, these are:

- To recycle 70% of the Isle of Man's waste across all sectors; and
- Reduce waste to landfill to just 5%.

31.2.3.6 Figure 31.1 illustrates the 2022 Towards Zero Waste targets, with the focus to promote waste prevention and reuse through a variety of education and communication as key methods to achieving them.

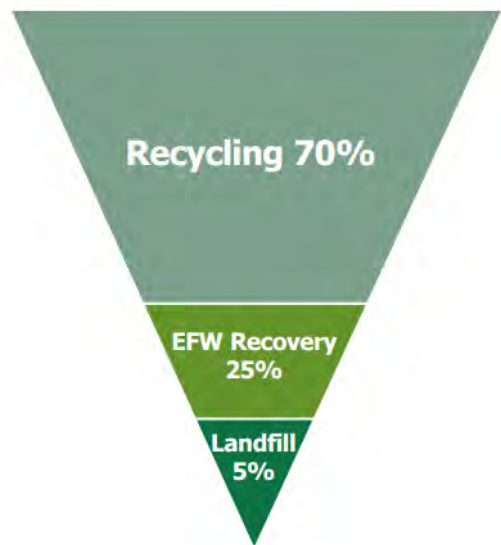


Figure 31.1: Zero Waste Vision 2022 Target (Department of Infrastructure, 2013).

31.2.3.7 Our Island Plan (2022) published by the Isle of Man Government also states the need for an ambitious Waste Management Strategy, which is set to be published and implemented by 2025 in order to meet the plan's priority of having "an environment we can be proud of", detailed in the plan.

31.2.3.8 Finally, the strategic objectives within Chapter 3 of the Isle of Man Strategic Plan 2016 includes the objective *"To contribute towards reducing energy consumption by encouraging more efficient use of energy through conservation, recycling and waste reduction."*

31.2.4 Guidance

National guidance

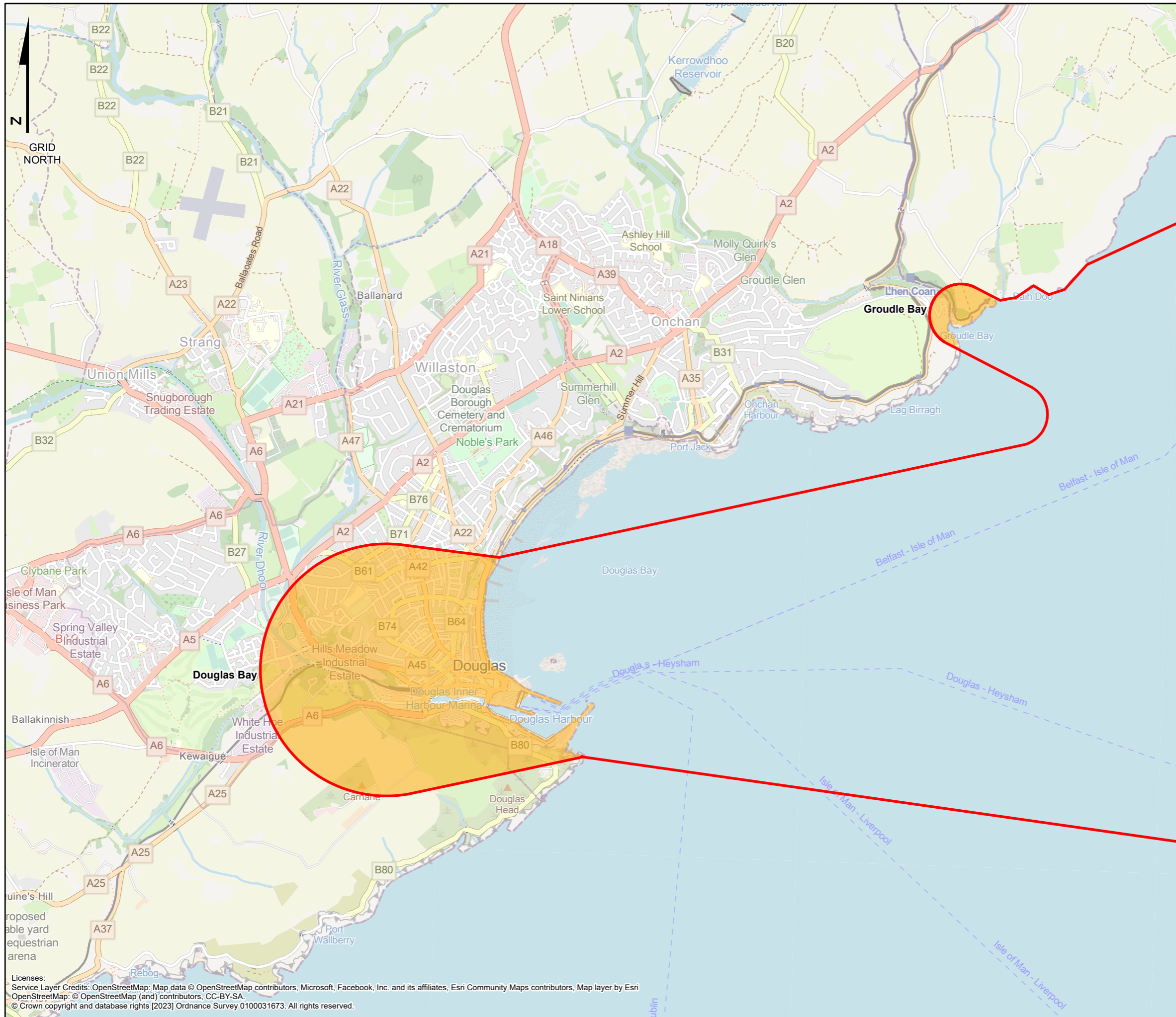
31.2.4.4 The following guidance is considered relevant to the materials and waste:

- Technical Guidance WM3: Waste Classification - Guidance on the classification and assessment of waste (Environment Agency et al., 2015);
- Guidance on applying the Waste Hierarchy (DEFRA, 2011);
- IEMA guide to: Materials and Waste in Environmental Impact Assessment; and
- DMRB LA 110 Material Assets and Waste (Highways England, 2019).

31.3 Study Area

31.3.1.4 With regards to the production of waste for the Proposed Development, the Study Area, as illustrated in Figure 31.2, will include the appropriately licensed waste infrastructure in the Isle of Man which could accept waste generation as a result of the construction; operation and decommissioning of the Proposed Development. This Study Area will extend to cover the entirety of the Isle of Man to MHW as this is the assumed destination for the waste arisings at the time of scoping (September 2023).

31.3.1.5 The Study Area will be reviewed and amended for future stages of the EIA process following identification of constraints and selection of routing the terrestrial onshore cables and the locations of the Onshore Substation (OnSS) is confirmed, as well as feedback received within the Scoping Opinion.



Moor Vannin

Figure 31.2

Material and Waste Study Area

- Scoping Boundary
- Material and Waste Study Area



Coordinate System: British National Grid
 Scale@A3: 1:30,000

0 0.5 1 1.5 Kilometres

0 0.1 0.2 0.3 0.4 0.5 Nautical Miles

REV	REMARK	DATE
00	Issued for Scoping	11/10/2023

Figure 31.2 Material and Waste Study Area
 Document no: 404.011945.00001.0035.0
 Created by: FGI
 Checked by: JSA
 Approved by: IFO



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31.4 Baseline

31.4.1 Overview of baseline

- 31.4.1.4 As detailed above, for the purpose of this EIA Scoping Report, waste is defined by the European Waste Framework Directive (2008/98/EC) as *'any substance or object which the holder discards or intends or is required to discard'*.
- 31.4.1.5 The materials and waste assessment will consider the waste quantities and types likely to be generated during the construction, maintenance, and decommissioning phase of the onshore elements of the Proposed Development. As it is assumed that the waste generated by these different phases of the project will follow the waste hierarchy (DEFRA, 2011) shown in Figure 31.3.

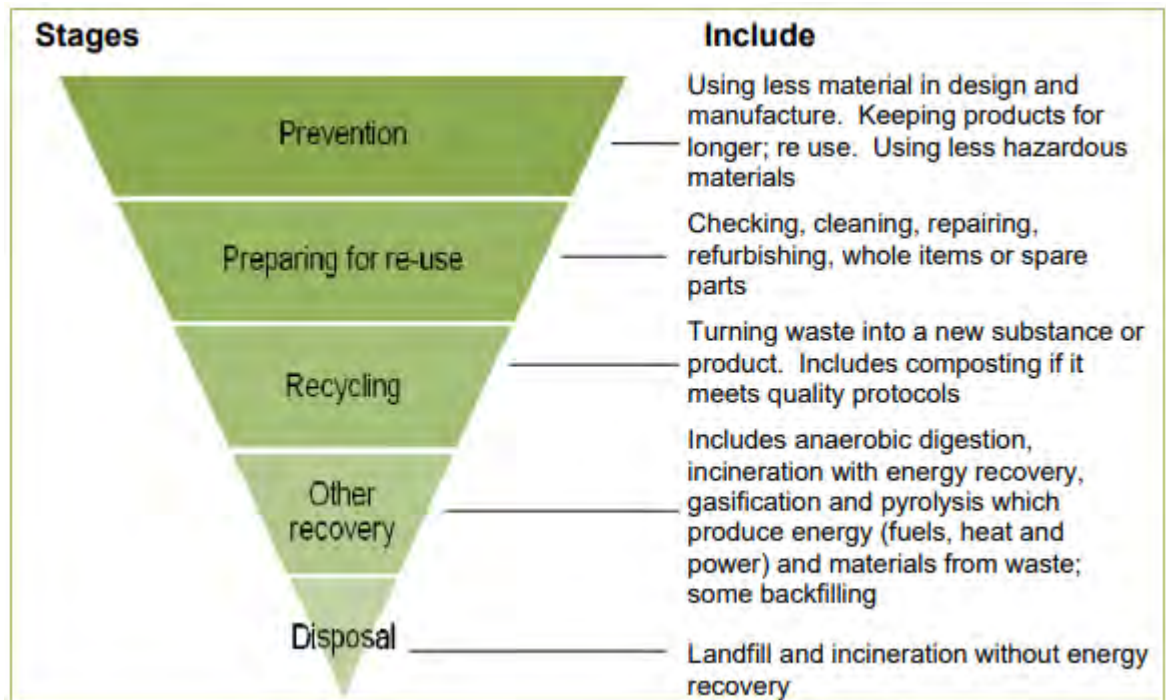
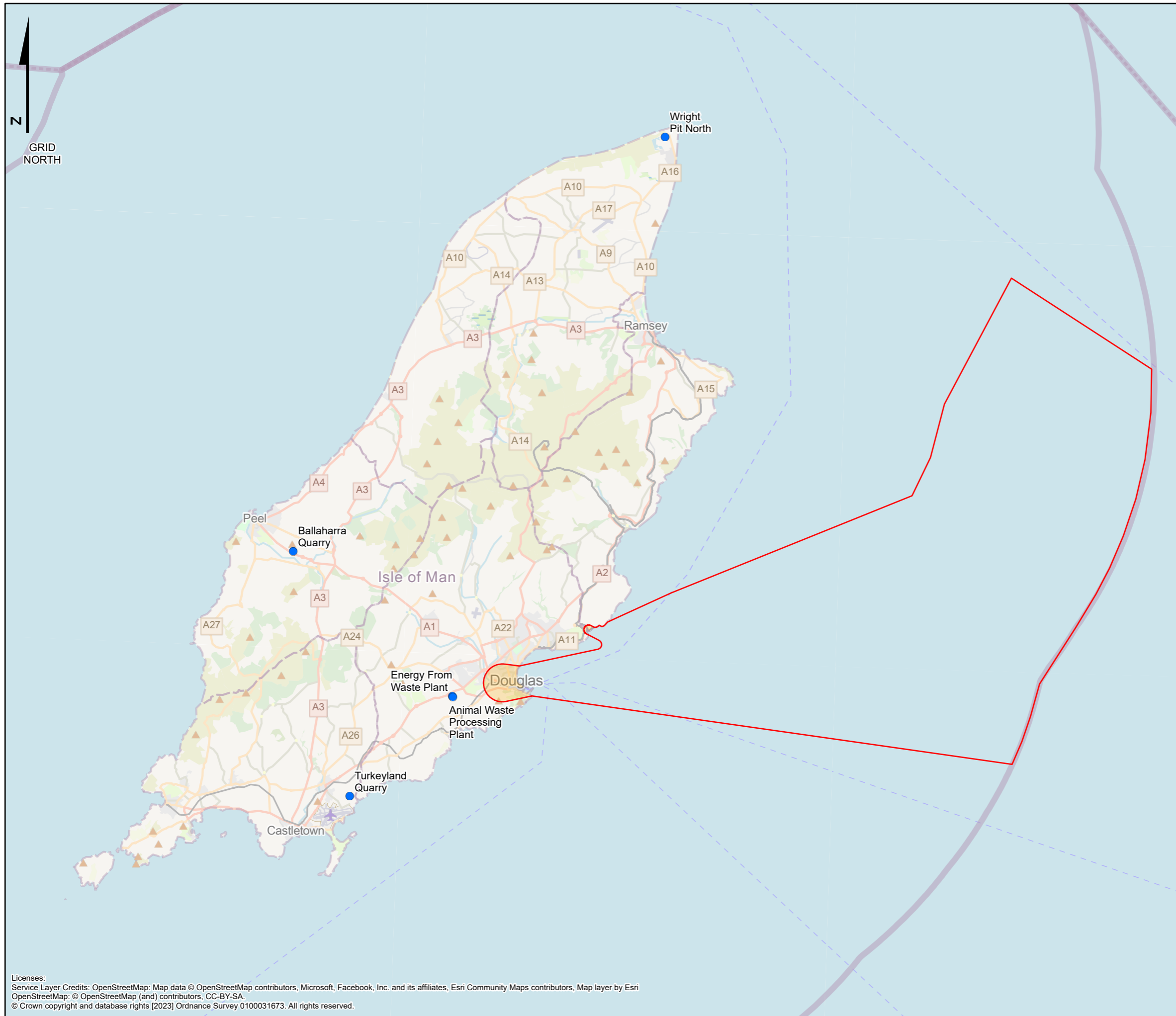


Figure 31.3: The waste hierarchy (DEFRA, 2011).

- 31.4.1.6 It is also assumed that if waste generated by the project is recycled, recovered through other means or disposed of it will be done so in existing waste infrastructure in the Isle of Man.
- 31.4.1.7 For waste, the sensitive receptor will focus upon the capacity of recycling facilities (where materials are recyclable) and landfill capacity (where disposal is necessary). The capacity of existing facilities in the Isle of Man will be identified and examined (see Figure 31.4). It may also be necessary to export waste arisings (e.g. hazardous waste) and in this case the baseline will set out possible destinations for this if insufficient capacity is not available in the Isle of Man.
- 31.4.1.8 Baseline waste levels in the region are set out in the 2022 Isle of Man Waste Returns Report (Isle of Man Government, 2022). The waste streams which are relevant to the Proposed Development are as follows:
- Construction and Demolition Waste (CDW);
 - Other Hazardous Waste;
 - Other Industrial Processing Wastes; and

- Municipal Wastes.

31.4.1.9 The 2022 Isle of Man Waste Report will be used to assess the destination of waste across the island, types of waste the facilities dispose of, and the tonnes of off-island waste the Isle of Man exports.



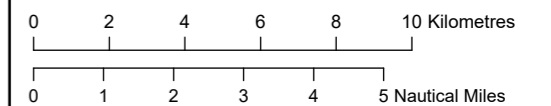
Moor Vannin

Figure 31.4
Material and Waste Facilities

- Scoping Boundary
- Material and Waste Study Area
- Material and Waste Facility



Coordinate System: British National Grid
Scale@A3: 1:200,000



REV	REMARK	DATE
00	Issued for Scoping	11/10/2023

Figure 31.4 Material and Waste Facilities
Document no: 404.011945.00001.0032.0
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31.4.2 Data sources

31.4.2.4 A more detailed baseline characterisation assessment will be conducted to inform the ES post-scoping. A full list of data sources to be used in the baseline is set out in Table 31.1 below.

Table 31.1: Baseline data sources.

Source	Summary	Coverage of the Study Area
Isle of Man Waste Policy and Strategy	The main vision for the strategy is to become a zero waste Island by setting two high level performance targets. By increasing recycling levels to 70% and decreasing landfill to 5%.	Isle of Man
Our Island Plan: Incorporating the Delivery of the Economic Strategy	Plan provides a clear vision for a secure, vibrant and sustainable future, which aims to implement an updated waste strategy by 2025.	Isle of Man
European Waste Framework Directive (2008/98/EC)	The foundation of framework for waste management is the five-step "waste hierarchy", to establish an order of preference for waste management and disposal.	Europe
Isle of Man Waste Returns Report 2022	A summary of types and amounts of waste, assess waste recovery and provides and insight into waste infrastructure.	Isle of Man

31.4.3 Summary of key receptors

31.4.3.4 The materials and waste assessment will consider the following key receptors:

- Holder of the waste;
- Producer of the waste;
- Waste Management Infrastructure; and
- Local Economy.

31.4.4 Further data collection to be undertaken

31.4.4.4 Existing baseline statistics will be obtained from publicly available data, such as from the Isle of Man Government to provide baseline information on the existing waste management infrastructure and the capacity of this infrastructure to accept the waste quantities produced by the construction; operation and decommissioning of the Project. The waste facilities to be considered will include (but will not be limited to): non-hazardous landfill; hazardous landfill; inert landfill and waste transfer stations.

31.4.4.5 As the Proposed Development develops the Materials required to construct; maintain and operate the Proposed Development will be established and refined. The quantities and type of materials required will inform the materials assessment of the EIA.

31.4.5 Future Baseline

31.4.5.4 The baseline environment is not static and will exhibit some degree of change over time, with or without the Proposed Development in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime

of the Proposed Development. This future baseline will be defined for the purposes of the EIA.

31.5 Identification of impacts and effects

31.5.1 Key parameters for assessment

31.5.1.4 The materials and waste scoping is based on the construction, maintenance and decommissioning of the following project infrastructure:

- Landfall: this contains the Transition Joint Bays (TJB) and Joint Bays (JB). These are underground concrete structures that house the joint between the offshore and onshore electrical connection cables (TJB specific) and the joint between sections of the onshore electrical connection cables (JB specific). The number of TJB is three (one per circuit).
- Terrestrial Electrical Connection Search Area: this contains all Onshore Infrastructure and associated works between landfall and the Isle of Man Grid Connection (Terrestrial Electrical Connection Cables). This includes the installation of 3 x 3 single core cables (three per HVAC circuit and three trenches). The permanent construction corridor will be up to 45 m and the temporary construction corridor will be up to 60 m depending on the presence of constraints.
- Onshore Substation (OnSS): housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid. This will cause permanent habitat to be lost in the location that is decided. The OnSS will consist of 1 main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45mx80m with a max height of 25m.
- Offshore Array area, with infrastructure comprising of:
 - WTGs – currently estimated to be up to 100 turbines, with a 320 m rotor diameter, maximum blade tip height of 389 m, and minimum blade tip height of 30 m.

31.5.1.5 For further details on these elements, see Chapter 3, Project Description.

31.5.1.6 At the time of writing (September 2023) the quantities of materials required for the construction and operation (e.g. steel and concrete) of the Proposed Development is not fully quantified. At this stage of the EIA process, it is assumed that materials for the Offshore infrastructure are likely to be sourced from a global market where their impact will be negligible compared to annual production rates and as a result LSE are unlikely to occur in this respect. As the design and technical elements of the onshore infrastructure evolves the material requirements will become refined and the quantities and material type will be detailed for the next stage of the EIA process.

31.5.1.7 Whilst the detailed material type and quantities for the construction and operation of the offshore elements of the Proposed Development are unknown it is thought that LSE from materials are likely to arise from those materials which are required in the highest quantities or are high in embodied carbon. This aspect of the assessment will be addressed as set out in section 27.6 of Chapter 27, Climate Change, only and is not included within the scope of the Materials and Waste assessment.

31.5.1.8 With regards to the materials required for the onshore infrastructure works such as aggregates or timber for shuttering, quantities required have not been fully defined but it is thought that these will be sourced from local markets. Depending upon the quantities of materials required for the Onshore infrastructure, there is the possibility

that these may put pressure on existing supply chains in the Isle of Man which have the potential to result in LSE. To manage the materials onsite during the construction phase a detailed Materials Management Plan (MMP) (see Table 31.2) will likely be prepared to optimise this process and minimise project impacts in relation to material use.

- 31.5.1.9 Waste will be produced during the construction, operation and decommissioning of the Proposed Development. Through careful site management (e.g. implementation of a Materials Management Plan) waste generated on site should be minimised as far as practicable. During the construction and operation phase, the development and adherence to a Site Waste Management Plan (SWMP), see Table 31.2, will enable waste to be effectively managed onsite and through the waste hierarchy it is thought that disposal to landfill will be minimal for the Proposed Development and LSE from the construction and operation of the Proposed Development is unlikely to result in LSE and is therefore scoped out and further assessment is not proposed at this stage.
- 31.5.1.10 The detailed quantities and types of waste produced during the decommissioning of the Proposed Development is not fully understood. There is also uncertainty over future recycling technologies which may be available when the Proposed Development is decommissioned. Therefore, at this stage of the process, there is the potential for LSE from waste produced during the decommissioning phase of the Proposed Development and this will be taken forward to assessment within the ES.
- 31.5.1.11 As the detailed material type and quantities, and therefore waste generated, for the construction and operation of the onshore and offshore infrastructure are unknown, it is thought that LSE from materials are likely to arise from those materials which are required in the highest quantities.

31.5.2 Commitments

- 31.5.2.4 As part of the iterative design process, a number of commitments have been proposed to limit the potential for effects on the environment. Further detail on the role of commitments as part of a proportionate EIA approach is provided within the Proportionate EIA Position Paper (Annex 5.A). A full description of these measures is provided in the Commitments Register (Annex 3.A). Those of relevance to materials and waste are described in Table 31.2 below.
- 31.5.2.5 Identified commitments is subject to further environmental assessment, scheme development and stakeholder engagement and consultation.

Table 31.2: Relevant commitments to materials and waste.

ID	Measure proposed	How this measure will be secured	Rationale
Co6	Development of a Decommissioning Programme.	Consent Condition(s)	To set out the requirements and methods for decommissioning, prior to those activities taking place at the end of the operational life of the project. Provide a description of the components to be decommissioned and their proposed decommissioning measures (for all onshore and offshore infrastructure).
Co25	Materials will be recycled and re-used throughout the lifecycle	Consent Condition(s)	To reduce the volume of waste generated from the Proposed Development and maximise

ID	Measure proposed	How this measure will be secured	Rationale
	of the Proposed Development as far as practicable.		opportunities for re-use and recycling of materials where practicable.
Co26	Development of, and adherence to, a Site Waste Management Plan (SWMP).	Consent Condition(s)	Sets out the procedures and processes for managing waste generated during construction.
Co27	Production and implementation of a Materials Management Plan.	Consent Condition(s)	Sets out the actions to be taken in the management of materials. The MMP will focus on the efficient resource management resulting in a reduction in waste as far as practicable.

31.5.3 Approach to assessment of likely significant effects

31.5.3.4 The Impacts Register (Annex 5.B) sets out the proposed assessment of potential effects on materials and waste at the scoping stage of the EIA process. This has been developed as a tool to aid the proportionate approach to EIA. It identifies all potential effects (whether they are likely to be significant or not) and provides a basis for the EIA going forward in terms of the level of impact assessment that will be required, and the further evidence that will be brought forward to support the proposed approach.

31.5.3.5 The Impacts Register (Annex 5.B) will be updated throughout the EIA process as the project progresses to application incorporating changes as a result of the iterative design process and responses to consultation via scoping and the Evidence Plan.

31.5.3.6 The proposed approach set out in the Impacts Register (Annex 5.B) has been based on a combination of:

- Commitments identified in Table 31.2 above and in the Commitments Register (Annex 3.A);
- The level of understanding of the baseline environment at this stage;
- The evidence for effects on materials and waste based on the most recent industry precedent, relevant scientific literature and evolving best practice guidance; and
- Professional judgement of the qualified materials and waste lead.

31.6 Proposed approach to the EIA

31.6.1.4 The Impacts Register (Annex 5.B) identifies the potential impacts on materials and waste associated with the Proposed Development that have (or do not have) the potential to result in LSE.

31.6.1.5 In line with the Scoping Strategy (Annex 5.C):

- **No LSE:** For impacts which are assessed at the scoping stage to have no potential to result in LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders). The proposed approach to these impacts is described further within section 31.7.2; and

- **LSE:** For impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail within the EIA. The proposed approach to these impacts is described further within section 31.7.3.

31.6.1.6 The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology, which is based upon the DMRB (Highways England, 2018). This methodology used broadly across the EIA is overarching guidance to technical authors to enable a consistent approach that outputs comparative results, whilst retaining topic-specific assessment guidelines and allowing a degree of expert judgement to be applied.

31.6.1.7 Whilst there is no specific guidance as to how the environmental effects of waste and resource generation and usage should be addressed for the purposes of EIA, the DMRB LA 110 Material Assets and Waste provides a framework for assessing and reporting the effects of material assets and waste.

31.6.1.8 Whilst the guidance has been produced for the delivery of highway infrastructure schemes the approach detailed within the assessment methodology is considered largely suitable for the assessment of the Proposed Development and will be used as appropriate. LA 110 provides a process for identifying the: Study Area; Data Collection; and Significance Category Descriptions.

31.6.1.9 Furthermore, the materials and waste assessment will be comprised of:

- An assessment that quantifies the materials and waste as a result of the activities associated with the Proposed Development;
- An assessment of the potential risks to the Proposed Development arising from materials and waste;
- The vulnerability and the resilience of the onshore waste infrastructure; and
- The potential inter-related impact of materials and waste with other environmental topics.

31.6.1.10 This proposed approach to the EIA is discussed in more detail in the relevant sections below.

31.6.1.11 The interim assessments presented in this Scoping Report for potential LSE and no LSE may be subject to change as the design of the Proposed Development progress; site surveys are undertaken; data is collected, and feedback is received from statutory stakeholders in response to the Evidence Plan Process. These changes relate to the change from LSE to No LSE and vice versa and any changes to this will be presented within the Consultation Materials presented in Q1/Q2 2024 and ES to accompany the consent application.

31.7 Post-scoping

31.7.1 Overview

31.7.1.4 This section describes the next steps for impact assessment in the post-scoping phase. For materials and waste, the scoping study has identified:

- Two impacts which have the potential to result in No LSE; and
- One impact which has the potential to result in LSE.

31.7.2 No LSE and next steps

31.7.2.4 Where it has been determined that impacts do not have the potential to result in LSE, the Applicant will bring forward further evidence to support this conclusion via the Evidence Plan Process. The proposed approach to provision of this further evidence is

set out in the Stakeholder Engagement Plan. Evidence likely to be brought forward to demonstrate no LSE includes a SWMP and a MMP.

31.7.2.5 It should be noted that other chapters may also consider the potential impacts of materials and waste, and the requirements for management. Thus, to avoid 'double counting' likely significant effects, the assessment may be required to scope out the impact of resources and waste on other environmental assessments.

31.7.3 LSE and next steps

Supporting studies

31.7.3.4 No modelling is proposed to inform the assessment of impacts related to materials and waste.

Assessment methodology

31.7.3.5 The EIA will assess the potential impacts on materials and waste identified in the Impacts Register (Annex 5.B). The approach to EIA will follow the approach outlined in Chapter 5, EIA Methodology. In addition to this general approach, the assessment of impacts on Materials and Waste will also follow the following guidance documents where they are specific to this topic.

31.7.3.6 DMRB LA 110 Material Assets and Waste provides a framework for assessing and reporting the effects of material assets and waste and the assessment will follow the framework provided by LA 110 Material Assets and Waste.

31.7.3.7 In addition to LA 110 Materials Assets and Waste, the IEMA has produced a guide: Materials and Waste in Environmental Impact Assessment (2020). The guiding principles of this document will be integrated into the assessment as appropriate.

31.7.3.8 As detailed in LA 110 Material Assets and Waste the significance categories will be determined as presented in Table 31.3.

Table 31.3: Significance category descriptions (DMRAB LA 110, 2019).

Significance category	Description
Very Large	<p><u>Material assets</u></p> <p>1) no criteria - use criteria for large categories</p> <p><u>Waste</u></p> <p>1) >1% reduction or alteration in national capacity of landfill are as a result of accommodating waste from a project; or</p> <p>2) construction of a new permanent waste infrastructure is required to accommodate waste from a project.</p>
Large	<p><u>Material assets</u></p> <p>1) project achieves < 70% overall material recovery recycling by weight of non-hazardous construction and demolition waste (CDW) to substitute use of primary materials and</p> <p>2) aggregates required to be imported to site comprises <1% reused/ recycled content and</p> <p>3) project sterilises >1 mineral safeguarding site and or peak resource.</p> <p><u>Waste</u></p> <p>1) >1% reduction in the regional capacity of landfill as a result of accommodating waste from a project; and</p>

Significance category	Description
	2) >50% of project waste for disposal outside of the region.
Moderate	<p><u>Material assets</u></p> <ol style="list-style-type: none"> 1) project achieves less than 70% overall material recovery recycling (by weight) of non-hazardous CDW to substitute use of primary materials; and 2) aggregates required to be imported to site comprise reused recycled content below the relevant regional percentage target <p><u>Waste</u></p> <ol style="list-style-type: none"> 1) >1% reduction or alteration in the regional capacity of a landfill as a result of accommodating ways from a project; and 2) 1 to 50% of project ways for disposal outside of the region
Slight	<p><u>Material assets</u></p> <ol style="list-style-type: none"> 1) project achieves 70 - 90% overall material recovery /recycling by weight of non hazardous CDW to substitute use of primary materials and 2) aggregates required to be imported to site comprise reused recycled content below the relevant regional percentage target <p><u>Waste</u></p> <ol style="list-style-type: none"> 1) <1% reduction or alteration in the regional capacity of landfill 2) waste infrastructure has sufficient capacity to accommodate ways for a project without compromising integrity of the receiving infrastructure (design life or capacity) within the region.
Neutral	<p><u>Material assets</u></p> <ol style="list-style-type: none"> 1) project achieved >99% overall material recovery recycling by weight non-hazardous construction demolition waste CDW to substitute use of primary materials and 2) aggregates required to be imported to site comprise >99% reused recycled content. <p><u>Waste</u></p> <ol style="list-style-type: none"> 1) no reduction or alteration in the capacity of waste infrastructure within the region.

31.7.3.9 LA 110 also describes the significance criteria that should be used for materials and waste assessment, this is described in Table 31.4.

Table 31.4: Significance criteria (DMRB LA 110, 2019).

Significance	Description
Significant (one or more criteria met)	<p>Material assets</p> <ol style="list-style-type: none"> 1) Category description met for moderate or large effect. <p>Waste</p> <ol style="list-style-type: none"> 1) Category description met for moderate, large or very large effect.
Not significant	<p>Material assets</p> <ol style="list-style-type: none"> 1) Category description met for neutral or slight effect. <p>Waste</p> <ol style="list-style-type: none"> 1) Category description met for neutral or slight effect.

31.7.3.10 The Transboundary Screening (Annex 5.D) has identified that transboundary effects may occur on materials and waste receptors outside of the Isle of Man Territorial Seas, and therefore these transboundary effects will be considered further within the EIA.

31.7.3.11 The EIA will also assess interrelated effects and cumulative effects (including Whole Project effects) on materials and waste receptors, in accordance with the methodology set out in section 5.7 and 5.8 of Chapter 5, EIA Methodology, respectively.

31.8 Questions to Consultees

- Question 31.1: Do you agree with the Study Area that has been identified for materials and waste?;
- Question 31.2: Do you agree that the baseline data sources identified are sufficient to adequately characterise the baseline?;
- Question 31.3: Do you agree that all impacts/effects that could arise from all stages of the Proposed Development have been identified within the Impacts Register (Annex 5.B)?;
- Question 31.4: Do you agree on the suitability of the proposed commitments to reduce or eliminate LSE relevant to materials and waste?; and
- Question 31.5: Do you agree that the proposed approach to EIA is sufficiently set out to enable a robust assessment allowing likely significance to be ascertained?

32 Protected Sites Assessment Strategy

32.1 Introduction

- 32.1.1.1 This Chapter presents the strategic approach that the Applicant proposes to be taken for the assessment of potential effects from the Proposed Development on protected sites within the jurisdiction of the Isle of Man.
- 32.1.1.2 It is acknowledged that the Isle of Man is a signatory to a number of conservation Conventions as detailed in paragraph 32.2.1.10 below. It is understood that the Isle of Man government must have regard to those conventions in the discharge of their consenting functions in order to ensure the conservation outcomes of those protected areas are achieved together with any domestic legislation. The starting point therefore is to understand and have regard to the existing measures and develop an approach that is fit for purpose under the proposed regime.

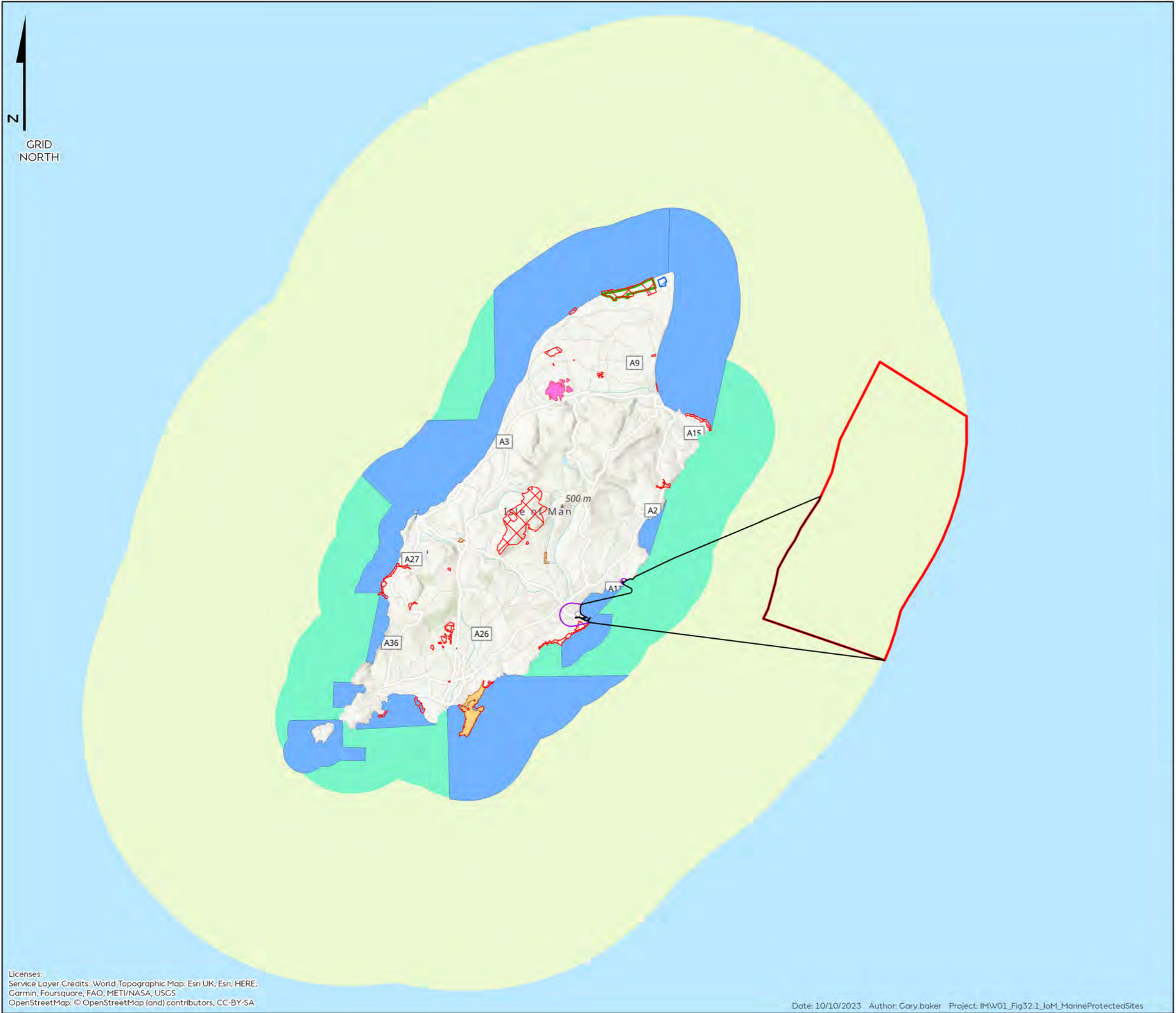
32.2 Isle of Man Protected Sites

- 32.2.1.4 DEFA is responsible for ensuring the protection of important species and habitats, as designated through the Wildlife Act 1990. This Act provides for the protection of species and habitats including through the establishment of nature reserves to:
- (a) Conserving marine flora or fauna or geological or physiographical features of special interest in the area; or
 - (b) Providing, under suitable conditions and control, special opportunities for the study of, and research into, matters relating to marine flora and fauna and the physical conditions in which they live, or for the study of geological and physiographical features of special interest in the area.
- 32.2.1.5 The Isle of Man has its own legally protected sites, as listed below and shown in Figure 32.1:
- Marine Nature Reserves (MNR) – which are the main conservation designation available for subtidal sites.
 - Areas of Special Scientific Interest (ASSI) – coastal protected areas which may extend down to the level of astronomical low water.
 - Areas of Special Protection (ASP) – designated under Section 3 (for birds) or 13 (for animals and plants) of the Wildlife Act 1990 in order to extend the provision of the Wildlife Act for certain species/habitats in certain areas.
 - Bird Sanctuaries – designated under the Wild Birds Protection Act 1932 & Protection of Birds Act 1955 and remain protected although this legislation has now been superseded by the Wildlife Act 1990.
 - National Nature Reserves (NNR) – designated under Section 31 of the Wildlife Act 1990. NNRs are likely to be of ASSI quality or higher.
- 32.2.1.6 In addition, there is a single Ramsar site in the Isle of Man as listed through the Ramsar Convention on Wetlands of International Importance.
- 32.2.1.7 At time of writing, the Isle of Man has 25 ASSIs, one NNR, ten MNRs, one ASP, one RAMSAR Wetland of International Importance, and five Bird Sanctuaries.
- 32.2.1.8 Table 32.1 provides a full list of protected sites as designated under the Wildlife Act 1990, the Wild Birds Protection Act 1932 & Protection of Birds Act 1955 (Bird

Sanctuaries) and Ramsar Convention, and Figure 32.1 shows the location of these sites.

Table 32.1: Isle of Man Protected Sites.

MNRs	NNRs	ASSIs	Ramsars	ASPs	Bird Sanctuaries
<ul style="list-style-type: none"> • Baie ny Carrickey MNR; • Douglas Bay MNR; • Langness MNR; • Laxey Bay MNR; • Little Ness MNR; • Niarbyl Bay MNR; • Port Erin Bay MNR; • Ramsey Bay MNR; • Calf and Wart Bank MNR; and • West Coast MNR. 	<ul style="list-style-type: none"> • Ayres NNR 	<ul style="list-style-type: none"> • Ballachurry Meadows ASSI; • Ballacyre Meadow ASSI; • Ballateare Meadow ASSI; • Ballaugh Curragh ASSI; • Central Ayres ASSI; • Cronk e King ASSI; • Cronk y Bing ASSI; • Curragh Pharrick ASSI; • Dalby Coast ASSI; • Dhoon Glen ASSI; • Douglass Head ASSI; • Eary Vane ASSI; • Glen Maye ASSI; • Glen Rushen ASSI; • Greeba Mountain & Central Hills ASSI; • Grenaby Garey ASSI; • Jurby Airfield ASSI; • Langness, Derbyhaven & Sandwick ASSI; • Marine Drive ASSI; • Maughold Head Cliffs & Brooghs ASSI; • Port St Mary Ledges & Kallow Point ASSI; • Poyll Vaaish Coast ASSI; • Ramsey Mooragh Shore ASSI; • Rosehill Quarry, Billown ASSI; and • Santon Gorge & Port Soldrick ASSI. 	<ul style="list-style-type: none"> • Ballaugh Curraghs Ramsar 	<ul style="list-style-type: none"> • Ayres Gravel Pits 	<ul style="list-style-type: none"> • Ballamoar Reservoir; • The Willows; • Tynwald National Park and Arboretum; • Renscault and Ballachrink; and • Parish of Malew.



Moor Vannin

Figure 32.1

Isle of Man Protected Sites in Relation to the Proposed Development

Scoping Boundary

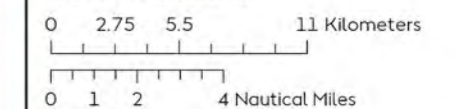
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array

Protected Sites

- 3 - 12M Zone
- Areas of Special Protection
- Areas of Special Scientific Interest
- Bird Sanctuaries
- Fisheries Zone
- Isle of Man Marine Nature Reserves
- National Nature Reserve
- RAMSAR Sites



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:325,000



REV	REMARK	DATE
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Main Title: IoM Protected Sites
Document no: IMW01_Fig32.1
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- 32.2.1.9 Full details for the sites in Table 32.1 can be accessed through the official Isle of Man Government website and, subject to consultation and confirmation from DEFA, will form the basis for the 'Protected Sites Assessment' (PSA).
- 32.2.1.10 The Isle of Man is also a signatory (via the UK) to six international wildlife and conservation related conventions, namely:
- Ramsar Convention on Wetlands of International Importance;
 - Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS);
 - Bern Convention on the Conservation of European Wildlife and Natural Habitats;
 - Washington Convention on the International Trade in Endangered Species of Flora and Fauna (CITES);
 - Oslo-Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR); and
 - Espoo Convention on Environmental Impact Assessment in a Transboundary Context.
- 32.2.1.11 Through entering these agreements, the Isle of Man has committed to helping protect endangered species and habitats at an international level, through considering impacts of activities within its borders on wildlife beyond its borders and mobile/ migratory species that might enter or move through its borders from beyond.
- 32.2.1.12 The Isle of Man is, however, not a signatory to the EU Habitats Directive and, therefore, there are no Natura 2000 (Special Protection Areas or Special Areas of Conservation) within the jurisdiction of the Isle of Man.

32.3 Isle of Man Consent Process

- 32.3.1.4 Any proposal to site controlled marine activities (including offshore renewable energy generation infrastructure and submarine cables) in Isle of Man Territorial Seas will require a MIC accompanied by an environmental assessment, once the Marine Infrastructure Management Act 2016 is in force. In addition, planning permission is required under the Town and Country Planning Act 1999 for development landward of MLW. The Proposed Development will prepare its consent applications in accordance with relevant supporting regulations, advice and guidance applicable at the time of consent application submission. The assessment of protected sites will form part of these applications, and the following section sets out the proposed approach to this. If any such regulations, advice or guidance differs from the approach set out in this Chapter, the Applicant will discuss and revise its approach in consultation with stakeholders.

32.4 Proposed Approach to Considering Impacts on Protected Wildlife Sites

32.4.1 Isle of Man Territorial Seas – Offshore Array and Offshore and Terrestrial Electrical Connection Cable (in part)

- 32.4.1.4 As established, the EU Habitats Directive does not extend to the Isle of Man. Therefore, there are no Special Protection Areas (SPAs) or Special Areas of Conservation (SACs) within Isle of Man waters and a 'HRA' is therefore not a requirement of consent applications. However, the Isle of Man is responsible for ensuring protection of its own protected sites, international sites (Ramsar sites) and species within its Territorial Seas and cross-boundary considerations.

32.4.1.5 The consent application will, therefore, need to have due consideration of likely impacts on Isle of Man protected nature conservation sites, Ramsar sites and other transboundary protected sites.

Protected Sites Assessment

32.4.1.6 It is proposed that a PSA will accompany the supporting environmental information (SEI) in support of any consent or permit applications to Isle of Man Government/ DEFA. This is in line with DEFAs guidance to developers which suggests that an EIA should be all encompassing in terms of assessment of significant impact on the environment.

32.4.1.7 The PSA will be informed by the Isle of Man Manx Marine Environmental Assessment (MMEA) report, and any advice or guidance obtained via pre-application liaison with the relevant statutory and regulatory authorities.

Approach to Assessment of Impacts

32.4.1.8 Figure 32.2, presents an overview of the proposed PSA process that the Applicant proposes to be taken for the assessment of potential effects from the Proposed Development on protected sites.



Figure 32.2: Isle of Man PSA Process.

- 32.4.1.9 The Applicant will, as a prerequisite, adhere to the measures already in place to deliver improved outcomes for ecosystems, habitats, species and the diversity within and between species in line with the Isle of Man's objectives relating to protected sites. Further to this the applicant will consider impacts in the context of achieving a coherent ecological network. This approach would satisfy the requirements of domestic Isle of Man marine and wildlife legislation and the requirements of international conventions (to which the Isle of Man is a signatory).
- 32.4.1.10 As illustrated in Figure 32.2, the PSA process will begin with a screening exercise whereby protected sites will be considered and 'screened in' (or out) based on the likelihood of a significant impact to occur through interactions with the Proposed Development alone or cumulatively with other plans or projects.
- 32.4.1.11 Screening will follow a source-pathway-receptor approach whereby an ecological receptor can only be impacted by an effect if a pathway exists through which the effect can be transmitted between the source activity and receptor. For example, a pathway exists for underwater noise generated during construction to affect marine mammal receptors, which are sensitive to underwater noise. However, for example, there is no pathway for the presence of construction vessels to affect benthic ecological receptors, which are not sensitive to disturbance due to the presence of vessels.
- 32.4.1.12 To ensure a well informed and thorough assessment it is important that relevant ecological receptors and conservation outcomes and/ or assessment criteria to deliver those outcomes are identified early and developed through consideration of the MMEA and consultation with statutory authorities.
- 32.4.1.13 All protected sites will be 'scoped into' the PSA screening exercise unless there is a robust evidence-based case for excluding a site, and such a decision is supported by statutory consultees.
- 32.4.1.14 For those sites screened in for PSA, assessment will follow a similar approach to the EIA regarding the steps to avoid unacceptable adverse impacts on protected sites. Accordingly, the Proposed Development will adopt an Avoid-Reduce-Mitigate approach to the iterative assessment process, whereby efforts are made from the outset to avoid any interactions with protected sites that could result in significant impacts.
- 32.4.1.15 As with the EIA process, the PSA will consider project-alone impacts as well as cumulative impacts of the Proposed Development with other projects or plans, as well as those parts of the Moir Vannin Offshore Wind Farm (Whole Project) outside of Isle of Man Territorial Seas on protected sites in the Isle of Man.
- 32.4.1.16 Where project-alone or cumulative interactions cannot be avoided the Applicant will seek to reduce those interactions through the design process to ensure that impact levels are kept within acceptable limits (such as export cable route selection to ensure the route minimises its overlap with key protected habitat features).
- 32.4.1.17 Where significant impacts cannot be reduced through standard design decisions then the next stage will be to consider the commitment options available to the Proposed Development to ensure that measures are put in place that will avoid residual significant impacts occurring on protected sites. These measures will be commitments made (captured within the Commitments Register) that are above and beyond standard design measures, such as a commitment to microsite around key benthic habitats based on the outputs of pre-construction surveys.
- 32.4.1.18 PSA scope will be confined to all protected wildlife sites only, as presented in Table 32.1 and Figure 32.1. Protected landscapes and protected heritage sites will be considered out with the PSA but within the EIA.

Transboundary Site Assessment

- 32.4.1.19 The Isle of Man is a signatory to six wildlife and conservation related conventions (as listed in section 32.2). The PSA will therefore need to include consideration and assessment of protected sites beyond Isle of Man Territorial Seas.
- 32.4.1.20 It is important that assessment information presented to other countries is clear and familiar. As explained above, the PSA will broadly follow an EIA-style approach which is well established across a wide range of projects where transboundary considerations and consultation were necessary.
- 32.4.1.21 However, consideration of potential effects on European Sites (SPA's and SAC's), as designated under the European Habitats Directive, will follow an AA style approach to ensure that the UK and EU Member consultees receive clear and relevant information on which to base their consideration of likely effects on European Sites within their jurisdiction.
- 32.4.1.22 A transboundary PSA screening assessment has been undertaken as part of this Scoping Report as Annex 32.A. Post-scoping, this will be followed by a more in-depth assessment, consideration of mitigation and apportioning any residual adverse effects to designated sites.

32.4.2 Marine Cable (in part) and Terrestrial Connections outside of the Isle of Man

- 32.4.2.4 It is recognised that the Proposed Development will be developed with either one or a combination of the potential Route to Market options (to create the "Whole Project"). Following a decision on the option(s) that will be taken forwards, the consents for the required assets will be sought separately to the Proposed Development from the relevant jurisdictions. Further information on the Route to Market options can be found in Chapter 3, Project Description.
- 32.4.2.5 As part of the consent application for the Route to Market options outside of the Isle of Man, both an EIA and a Report to Inform Appropriate Assessment (RIAA) are expected to be prepared for the grid infrastructure works. These components of the consent application will only cover distinct works (marine cable) outside of the Proposed Development in Isle of Man Territorial Seas.
- 32.4.2.6 Regarding designated sites, the assessments will consider the potential for these works outside of Isle of Man Territorial Seas to adversely affect SACs, SPAs and Ramsar sites.
- 32.4.2.7 The RIAA in-combination assessment will consider any other plans or projects that could act in combination with these works to result in LSE/ Adverse Effect on Integrity (AEoI). This would most likely include parts of the Proposed Development (e.g. the Offshore Array) in Isle of Man Territorial Seas which have LSE on SACs, SPAs and/or Ramsar sites outside of the Isle of Man- especially in terms of effects on mobile species (birds, marine mammals, fish).
- 32.4.2.8 The RIAA will also include consideration of transboundary European Protected Sites and Ramsar Sites, which may include (based on screening distances) those Isle of Man Ramsar sites.
- 32.4.2.9 This approach would satisfy the requirements of the Habitats Directive, as implemented in other jurisdictions such as the UK and Eire.
- 32.4.2.10 The potential for any effects in the Isle of Man's designated wildlife sites from the grid infrastructure outside of Isle of Man waters will be considered within the transboundary assessment within the EIA and not the RIAA. Any such assessment will be developed in a manner that is consistent with the PSA to enable effective engagement with DEFA and other relevant stakeholders in the Isle of Man.

32.5 Summary

- 32.5.1.4 In summary, potential impacts on protected wildlife sites will be considered through a PSA which will follow an EIA-style approach and provide compliance with all the Isle of Man's wildlife/ ecological conservation obligations. Consultation with the Isle of Man Government and adherence to relevant guidance (e.g. the MMEA Report) will be an integral part of this process.
- 32.5.1.5 The PSA will include a transboundary site assessment which will also utilise an EIA-style approach except when considering any likely significant effects on EU designated sites (SACs and SPAs) outside of Isle of Man Territorial Seas. A RIAA-style approach will instead be followed for these sites.
- 32.5.1.6 In terms of those parts of the Whole Project outside of the Isle of Man and its territorial sea, an EIA and RIAA will be undertaken and presented to inform consent applications to other regulatory bodies (e.g. the Secretary of State in England and Wales). The EIA and RIAA processes will include consultation with the Isle of Man Government as an important transboundary consultee regarding developments adjacent to Isle of Man Territorial Seas. This will ensure due consideration is given to the potential for effects on Isle of Man Protected Sites. A similar approach has been adopted for other recent projects in the Irish Sea, notably Awel y Môr and more recently Mona and Morgan Offshore Wind Farms.

33 Summary and Conclusion

33.1 Overview

- 33.1.1.1 This EIA Scoping Report has been prepared to request a Scoping Opinion from DoI and DEFA in relation to the proposed consent applications for the Proposed Development, namely:
- Application for a MIC under MIMA, for all parts of the Proposed Development seaward of MHW; and
 - Application for planning permission under the Town and Country Planning Act 1999, for all parts of the Proposed Development landward of MLW.
- 33.1.1.2 This Scoping Report is intended to support engagement with the Isle of Man Government, statutory and non-statutory consultees, and the local community on the EIA process promoted by the Applicant. It invites consultees to provide relevant information and comment on the proposed approach to EIA, to ensure that a robust and proportionate EIA is undertaken.
- 33.1.1.3 Presented for each topic within this Scoping Report are the relevant legislation, policy and guidance, proposed Study Area specific to that topic and receptors, currently available baseline data, methodology for assessing impacts and provision of proposed commitments, a proposed approach to EIA and any deviation from the standard EIA methodology, the next steps in the application process and any questions to consultees.
- 33.1.1.4 This Scoping Report and Impacts Register (Annex 5.B) have identified the main aspects of the offshore and onshore environments likely to be affected by the construction, operation and maintenance, and decommissioning of the Proposed Development. For each of these identified impacts, the Scoping Report has identified the extent of relevant environmental studies that are to be undertaken in the next stages of the EIA (see Proposed Approach to EIA).
- 33.1.1.5 The strategy applied to this Scoping Report (detailed in Annex 5.C, Scoping Strategy) is not to explicitly “scope out” any impacts from the EIA but to identify impacts of LSE or No LSE, with a clear process on how to confirm this position and the next steps. This approach is promoted a proportionate approach to EIA while supporting the “precautionary principle”. This approach reduces the burden on the EIA team to bring together all the relevant information to support the conclusion of No LSE in the Scoping Report, and the additional burden of review and agreement of No LSE in the EIA early in the pre-application process.
- 33.1.1.6 The submission of this Scoping Report is the precursor to the preparation and submission of the resulting ES and is intended to inform the scope and methodology of that assessment, incorporating feedback from relevant stakeholders.

33.2 Approach to EIA

33.2.1 The Impacts and Commitments Registers

- 33.2.1.4 To support a proportionate approach to the EIA, the Applicant has developed an Impacts Register (Annex 5.B) and a Commitments Register (Annex 3.A).
- 33.2.1.5 The Impacts Register presents all impacts identified associated with the Proposed Development at scoping, along with an LSE assessment of each individual impact in EIA terms. The Commitments Register outlines the early phase commitments that have been made by the Applicant as part of the Proposed Development, linked to

the identified impacts within the Impacts Register. Commitments have been suggested to eliminate or reduce LSE to environmentally acceptable levels.

33.2.1.6 The total number of LSE and No LSE impacts identified within this Scoping Report are:

- 113 impacts which have the potential to result in No LSE; and
- 132 impacts which have the potential to result in LSE.

33.2.1.7 Impacts identified as LSE or No LSE shall progress as per the process outlined in Figure 33.1).

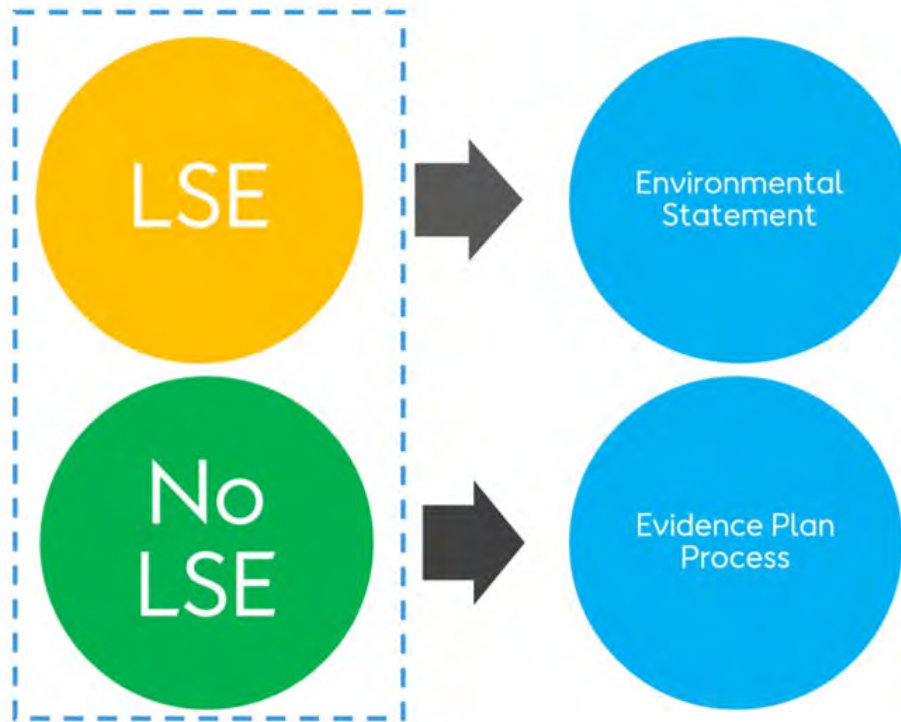


Figure 33.1: Categorisation of LSE into two categories within the Scoping Report and the resultant path to Evidence Plan and Environmental Statement.

33.2.2 No LSE

33.2.2.4 As illustrated in Figure 33.1, for impacts which are assessed at the scoping stage to result in No LSE, the Applicant will bring further evidence forward to support this via the Evidence Plan Process (and any other relevant direct consultation with key stakeholders).

33.2.2.5 Details of the type of evidence that is proposed to be presented to stakeholders, and approximate timelines for provision of evidence, is noted within the Impacts Register (Annex 5.B), and further detailed within the corresponding 'No LSE' sections of each topic chapter.

33.2.3 LSE

33.2.3.4 As illustrated in Figure 33.1, for impacts which are assessed at the scoping stage as having the potential to result in LSE, the Applicant will consider these in detail as part of the EIA and present assessments in the ES that will accompany the consent application(s). The proposed approach to these impacts is described further within the corresponding 'LSE' sections of each topic chapter.

33.2.4 Evidence Plan Process

33.2.4.4 Irrespective of the conclusion of LSE or No LSE, stakeholders will have the opportunity to review, feedback, and agree to the conclusions and the route/ methodology of assessment through the Evidence Plan Process, the key stages of which are outlined in Figure 33.2.

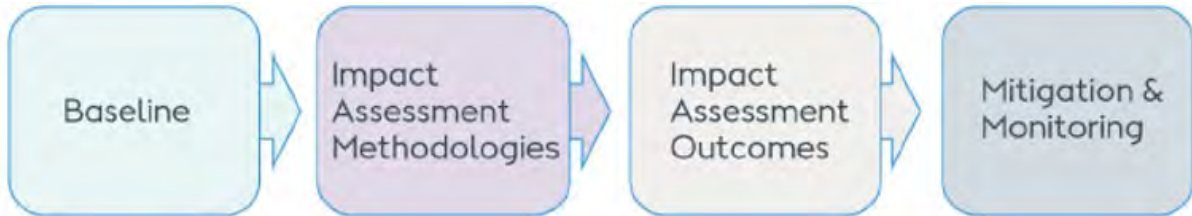


Figure 33.2: Overview of the four key stages of the Evidence Plan Process.

33.2.4.5 Further detail on the Evidence Plan Process and the proposed Technical Advisory Groups are available in Chapter 6, Consultation.

33.3 Next Steps

33.3.1.4 The Applicant plans to further refine our proposals based upon the responses received on the Scoping Report and ongoing consultation (see Chapter 6, Consultation) throughout the pre-application phase. The final design of the Proposed Development and results of the EIA will be presented in an ES which will accompany the MIC and TCPA applications.

33.3.1.5 A Scoping Opinion is anticipated from the Isle of Man Government under the timescale set out within MIMA. Once the Scoping Opinion has been obtained from the DoI, preparations will be made for the formal Pre-Application Consultation in for April/May 2024 (see Chapter 6, Consultation and Annex 6.A CECAS). The Pre-Application Consultation will be supported by the production of "Consultation Materials" which will summarise the progress made from this Scoping Report to the time of consultation, including any changes in and between LSE and No LSE, and additional surveys or studies completed and the outcomes of any assessment and associated mitigations.

33.3.1.6 In addition, a summary of all consultation responses received via consultation will be presented in a Consultation Report (see section 6.3.2 of Chapter 6, Consultation), which will also accompany the MIC and TCPA applications. The Consultation Report will present how the project plans have evolved iteratively in response to feedback received throughout the pre-application consultation with the community, prescribed consultees, statutory consultees and other stakeholders and to present how their feedback has influenced our proposals as the final design has emerged.

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Moor Vannin Offshore Wind Farm Scoping Report

Volume 5: Annexes



Moor Vannin Offshore Wind Farm: Document Reference:

Annex 3.A Commitments Register

Prepared	GoBe Consultants & SLR Consulting, October 2023
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Contents

- [1 Glossary and Acronyms](#) Presents defined terms and acronyms used within the Commitments Register.
- [2 Relevant Documents](#) Provides a list of the relevant additional documents required to secure commitments, for example outline plans and management strategies.
- [3 Overview](#) Provides an overview of the Commitments Register and how to use it.
- [4 Commitments Register](#) A register of all Moor Vannin Offshore Wind Farm Commitments and details of how Commitments are secured.
- [5 RPSS & Scoping Change Log](#) A change log which illustrates any changes made to the Commitments between RPSS and Scoping and an explanation for such changes.
- [6 Public Commitments](#) A log of all Commitments suggested by members of the public at Local Information Events and relevant cross referencing to the Register.
- [7 Examination Change Log](#) A change log which illustrates any changes made to the Commitments during the MIC Examination and an explanation of such changes.

Moor Vannin



1. Glossary and Acronyms

Glossary

Term	Definition
Joint bays	An excavation located at regular intervals along the cable route consisting of a
Link boxes	These are smaller pits, compared to JB's, which house connections between the cable shielding, joints for fibre optic cables and other auxiliary equipment.
Primary Commitment	Measures that form an intrinsic part of the design that are described in the design evolution narrative and included within the project description e.g. reducing development heights to reduce visual impact.
Secondary Commitment	Measures that require further activity in order to achieve the anticipated outcome, e.g. development of the optimal reinstatement measures for restoring a disturbed sensitive natural habitat.
Tertiary Commitment	Measures which will be required regardless of the EIA process as they are imposed e.g. as a result of legislative requirements and/or standard industry practices e.g. via a Construction Environmental Management Plan (CEMP), Code of Construction Practice (CoCP) or similar.
Offshore	Offshore covers seaward of MHW.
Onshore	Onshore covers landward of MLW.

Acronyms

Acronym	Definition
AEZs	Archaeological exclusion zones
AIPP	Asset Installation & Protection Plan
ANP	Aids to Navigation Plan
CEMP	Construction Environmental Management Plan
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DEFA	Department of Environment, Food and Agriculture
DOI	Department of Infrastructure
ERCoP	Emergency Response Cooperation Plan
GHG	Green House Gas
FCLP	Fisheries Co-existence and Liaison Plan
FLO	Fisheries Liaison Officer
HSE	Health, Safety & Environment
INNS	Invasive Non Native Species
LAT	Lowest Astronomical Tide
LEMP	Landscape & Ecology Management Plan
MGN	Marine Guidance Note
MHW	Mean High Water
MIC	Marine Infrastructure Consent
MLW	Mean Low Water
MMNT	Manx Museum and National Trust
MPCP	Marine Pollution Contingency Plan
NLB	Northern Lighthouse Board
NRMM	Non Road Mobile Machinery
NtM	Notice to Mariners
O&M	Operation and Maintenance
OREIs	Offshore Renewable Energy Installations
PAD	Protocol for Archaeological Discoveries
PAMP	Public Access Management Plan
PIMMP	Project Impact Monitoring & Mitigation Programme
ProW	Public Rights of Way
SAR	Search and Rescue
SWMP	Site Waste Management Plan
UXO	Unexploded Ordnance
WSI	Written Scheme of Investigation

3. Overview

Moor Vannin Offshore Wind Farm has adopted a number of Primary, Secondary and Tertiary Commitments (see glossary for definitions) as part of the EIA process in order to avoid or reduce impacts where possible. This annex details all Commitments that are taken forward within the Scoping Report and provides details as to how the Commitments are secured, for example by providing cross referencing to MIC Condition or Consent Condition (TCPA). A list of documents which will be relevant to and should be read in conjunction with the Commitments Register submitted with the ES will be set out in Section 2 when this document is updated for Application.

These Commitments have been proposed during the drafting of the Scoping Report as mitigation measures to reduce impacts identified in the Scoping Report. Following Scoping the Commitments will be further informed by formal consultation with statutory consultees, subsequent informal consultation with a range of key consultees and feedback from members of the public at Local Information Events. Following consultation, the Commitments Register may be updated to include new or amended Commitments in response to feedback. An overview of the consultation proposed is provided within Volume 1, Chapter 6, Consultation.

The following tables provides an overview of the information contained within the Commitment Register#

Table 1: Commitment Register (Section 4) Explained

Commitment Reference	Each Commitment has a unique ID assigned to it to enable consultees to easily track the evolution of commitments throughout the development of the Proposed Development.
Commitment Stage	Relates to the stage of the Proposed Development when the Commitment was made.
Type	Details whether the Commitment is Primary, Secondary, Tertiary or Enhancement (see Glossary).
Moor Vannin Commitment	Details the Commitment made by Moor Vannin Offshore Windfarm.
Rationale	Details the rationale for proposing each Commitment.
Project Phase	Details the phase the Commitment is relevant to (e.g. construction).
Project Element	Details the elements the Commitment is relevant to.
Onshore Topic relevance	Details the onshore topics which the Commitment is relevant to. The user can filter by topic to allow all Commitments relevant to a specific topic to be seen. The Commitment will also be detailed within the identified Onshore Chapters of the Scoping Report.
Offshore Topic relevance	Details the offshore topics which the Commitment is relevant to. The user can filter by topic to allow all Commitments relevant to a specific topic to be seen. The Commitment will also be detailed within the identified Offshore Chapters of the Scoping Report.
How is the Commitment secured?	Details the mechanism for how the Commitment is to be legally secured (for example through inclusion of a Requirement of the MIC).

Table 2: Change Log (Section 5 & 7) Explained

Commitment Reference	Each Commitment has a unique ID assigned to it to enable consultees to easily track the evolution of commitments throughout the development of the project.
Commitment Stage	Relates to the stage of development when the Commitment was made.
Moor Vannin Commitment	In the Commitments Register provided with the future ES, this will detail the Commitments made by Moor Vannin at earlier development stages which have since been revised or removed within the ES.
Explanation of the change	In the Commitments Register provided with the ES, this will provide an explanation for the changes made to Scoping Commitments.

Table 3: Public Commitments (Section 6) Explained

Public Commitment Reference	This will be a reference for Commitments suggested by members of the public during public consultation events.
Public Commitment/Comment	This will detail any Commitment or comment made by the member of the public.
Moor Vannin Action	this will detail how a comment has been responded to: i.e. New commitment made; an existing commitment amended; the comment covered by an existing comment; or the comment noted and requires no further action.
Relevant Commitment Reference	Will provide a reference to the new or relevant updated/existing commitments which are included within the Commitment Register (Section 4).
Moor Vannin Response	Moor Vannin response to the comment made and an explanation as how this has been taken into consideration within the Commitment Register.

6. Public Commitments

Public Commitment Reference	Public Commitment/Comment	Moor Vannin Action	Relevant Commitment Reference	Moor Vannin Response



Isle of Man Offshore Wind Farm

Annex 5.A - Proportionate EIA Position Paper

Prepared SLR Consulting, July 2023
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Abbreviations and Acronyms

Term	Definition
AfL	Area for Lease
CECAS	Community Engagement, Consultation and Action Strategy
CoCP	Code of Construction Practice
DAA	Developable Area Approach
DEFA	Department of Environment, Food and Agriculture
Dol	Department of Infrastructure
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
IEMA	Institute of Environmental Management and Assessment
LSE	Likely Significant Effects
MDS	Maximum Design Scenario
MIC	Marine Infrastructure Consent
NIC	National Infrastructure Commission
NSIP	Nationally Significant Infrastructure Project
PINS	Planning Inspectorate
UK	United Kingdom

1 Introduction and background

1.1.1.1 This Position Paper has been prepared by the Orsted Isle of Man (UK) Ltd (The Applicant) to inform stakeholders on the approach to and use of:

- Proportionate Environmental Impact Assessment (EIA); and
- The Design Envelope (referred to in planning terms as “The Rochdale Envelope”).

1.1.1.2 Proportionate EIA refers to a process that tailors the level of assessment to the scale and complexity of a development or the nature of a specific impact, recognising that there is no “one size fits all”. It aims to strike a balance between presentation and evaluation of all the available information with efficiency by identifying and addressing potential environmental impacts appropriately and proportionate to their level of significance. By focusing on relevant environmental matters to the decision-making process, proportionate EIA allows for more effective decision-making.

1.1.1.3 The use of the Design Envelope in consenting nationally significant infrastructure projects (NSIPs in the United Kingdom (UK) under the Planning Act 2008 regime) is well established. In planning terms, a Design Envelope refers to a set of predefined guidelines and parameters that dictate the permissible limits and characteristics of a development project. The Design Envelope typically includes various elements, such as turbine type.

2 Proportionate EIA

2.1.1.1 As noted by the Institute of Environmental Management and Assessment (IEMA) delivering proportionate EIA is a key issue for the UK planning and consenting system and developers seeking to take projects forward:

"...the drive for improved quality in EIA, combined with the UK's evidence-based and precautionary approach, has led to substantial challenges for the future of practice. The increased complexity of multi-faceted decisions and the wider range of stakeholders who seek transparency and clear audit trails, has further compounded the problems. The combined impact of the above good intentions has often led to individual EIAs being too broadly scoped and their related Environmental Statement (ES) to be overly long and cumbersome."

2.1.1.2 IEMA goes on to note that:

*"... one result of these disproportionate approaches is that **matters** that may be most important to design, **decision-making** and consent conditions can be **lost** amidst excessive detail on less material matters"*

2.1.1.3 Furthermore,

*"IEMA suggests that "environmentally informed design and inclusion of **mitigation** (primary and tertiary) as part of the design process" can **help** to provide a more **proportionate ES**."*

2.1.1.4 IEMA identifies four key themes that are relevant in achieving proportionate EIA and the Applicants response to these themes.

- **Enhancing People:** so that those involved in EIA have the skills, knowledge and confidence to avoid an overly precautionary approach.

A Proportionate EIA Position Paper has been developed, and a series of internal and workshops have been concluded to ensure the EIA team are versed in Proportionate EIA. A Proportionate EIA Roadshow shall be undertaken with key stakeholders to assist their understanding of the approach. These actions generated a momentum for the proportionate EIA approach, develop a culture for its adoption and engaged with those who required an understanding of it to progress assessments and facilitate ease of review.

- **Improving Scoping:** to generate a more consistently focused approach to this critical activity throughout the EIA process.

An iterative process for the route planning and site selection phase will be adopted with development of reporting and presentation tools to inform and set out clearly the rational for the EIA scoping document (to be presented in Scoping Report)

- **Sharing Responsibility:** recognising that disproportionate EIA is driven by many factors and that enabling proportionate assessment will require collaborative actions that work towards a shared goal.

A range of activities are anticipated to be undertaken to assist collaboration including proactive engagement with stakeholders; establishment of the Evidence Plan Process (EPP) with "Uniquely Manx" Working Groups (e.g. Lifeline Services Working Group). The Applicant shall actively seek Commitments from the public and adopt these wherever practicable; and develop of a Design Vision for onshore elements of the Project.

- **Embracing Innovation and Digital:** modernising EIA to deliver effective and efficient assessment and reporting that adds value to projects and their interaction with the environment.

Digital mapping tools and use of a digital tool ('Commonplace') to engage with local communities and assist with public and local community consultation may be adopted, improving the collective knowledge from Manx communities.

2.1 Tools to deliver proportionate EIA

2.1.1.1 A number of tools and processes will be developed to assist implementing Proportionate EIA, the key elements of which are set out below along with their function and explained in the following paragraphs and in Figure 2-1.



Figure 2-1: Summary of the proportionate EIA deliverables.

2.1.1.2 **Impacts Register:** A cornerstone of the approach to delivering proportionate EIA. The impacts register lists all potential impacts identified as part of the Isle of Man Offshore Wind Farm Project development, construction and operation. States the magnitude, sensitivity and significance for impacts considered in detail for all potential impacts associated with all activities, in all phases of development. It identifies which impacts are not considered in detail in the ES and which of those have Likely Significant Effects (LSE) to be considered through further assessment. Those impacts 'No LSE' are subject to agreement with stakeholders via the Evidence Plan Process (EPP). Additionally, this register captures a summary of mitigation and commitments considered and presented, relative to each impact (captured in a Commitments Register). This register provides for stakeholders to view all project impacts in one place, along with their scoping status, mitigation and decision on final assessment and is updated throughout the scoping and pre-application phase of the project. By employing the use of the Impacts Register to present all potential project impacts, the ES chapters can be used to focus on those impacts expected to result in a LSE. This supports decision makers and stakeholders review of the project impacts and ensures that matters that may be most important to design, decision-making and consent conditions are not lost amidst excessive detail on less material matters.

- 2.1.1.3 An example Impacts Register is available at: [Impacts Register Example](#). However, the Applicant has developed an Isle of Man register that will be available at the Proportionate EIA Roadshow for demonstration.
- 2.1.1.4 **Commitments Register:** throughout project development the Project will make commitments to mitigate, where possible, against the impacts identified in the Impacts Register. These commitments will be logged and detailed within the Commitments Register, which will serve as the repository for all project commitments. This register will outline each commitment, the activity and project phase it relates to, the relevant environmental receptor, and details how the commitment will be secured within the relevant application documents.
- 2.1.1.5 Commitments are classified mitigation measures in accordance with the IEMA 'Guide to Shaping Quality Development' (IEMA, 2016) definitions, as follows:
- Primary (inherent) mitigation are measures that form an intrinsic part of the design that are described in the design evolution narrative and included within the project description e.g. reducing infrastructure heights to reduce visual impact;
 - Secondary (foreseeable) mitigation: those measures that require further activity in order to achieve the anticipated outcome, e.g. development of the optimal reinstatement measures for restoring a disturbed sensitive natural habitat; and
 - Tertiary (inexorable): are measures which will be required regardless of the EIA process as they are imposed e.g. as a result of legislative requirements and/or standard industry practices e.g. via a Code of Construction Practice (CoCP) or similar.
- 2.1.1.6 An example Commitments Register is available at: [Commitment Register Example](#)
- 2.1.1.7 **Application Document Register:** the document register will list all of the documents comprising the application for consent. The register should be used in conjunction with the Commitments Register to easily identify those documents that secure each commitment made by the project.
- 2.1.1.8 An example Application Document Register is available at: [Application Document Register Example](#). The Applicant has developed an Isle of Man specific Commitments Register that will be available at the Proportionate EIA Roadshow for demonstration.
- 2.1.1.9 All form, function and inter-relationships between the registers will be presented to all stakeholders via Proportionate EIA Workshops. As the Isle of Man specific registers develop, they will be consulted upon with key stakeholders via the Evidence Plan process and made publicly available online at key points in the project development (e.g at Scoping and along with the application).
- 2.1.1.10 One key aspect of Proportionate EIA is the identification of the Likely Significant Effects (LSE). This assessment of likely significance is supported by a combination of:
- knowledge acquired by the EIA team on baseline conditions available to date;
 - definition of the project; relevant policy, guidance and standards;
 - the evidence base and experience of similar projects passing through the consenting system;
 - topic-specific criteria for impact magnitude, receptor sensitivity to impacts and significance of effect; and
 - the professional judgement of experts.

2.1.1.11 As a consequence of the aforementioned approach, a reasonable degree of confidence in the identification of LSE can be anticipated at the scoping stage. Any change in position or opinion on LSE is an iterative process in itself, with the evolution of position on LSE captured in the Impacts Register. Further resolution of potential LSE will progress upon receipt of the Scoping Opinion, including the evidential requirements to support LSE through the EPP process.

2.2 Commit, Consult, Design

2.2.1.1 The Applicant proposes a 'Commit, Consult, Design' ethos in the development of the Isle of Man Offshore Wind Farm Project with such commitments integrated into the project, driving design and minimising adverse environmental effects. This ethos is embedded in the staged approach to route planning and site selection. In addition to designing a technically feasible project, the Applicant therefore aims to avoid or reduce impacts by committing to avoid the most sensitive, important or valuable features early in project design and in so doing reducing the scope of the EIA and the amount of assessment required.

2.2.1.2 Figure 2-2 identifies the iterative Commit, Consult, Design ethos which will be used to help develop the Isle of Man Offshore Wind Farm and is the guiding principle which underpins the entire Approach to proportionate EIA.



Figure 2-2: Commit, Consult, Design ethos.

2.2.1.3 The three stages of this process:

- **Commit:** Firm commitments are provided by the Applicant to mitigate (reduce or eliminate) LSE with these being set out in the Commitments Register including details of how commitments are secured.
- **Consult:** The project description and associated commitments to reduce or avoid LSE have been consulted on widely.
- **Design:** The earliest stages of the design process relate to route planning and site selection which incorporated a number of commitments to avoid or reduce LSE.

2.2.1.4 One key output of the Commit, Consult, Design ethos is the production of a Design Vision Statement. The Design Vision Statement will present the 'vision' for the Isle of Man project. It shall define how design parameters, mitigation measures (primary and secondary commitments (identified as part of the Proportionate EIA), enhancement measures and biodiversity measures come together and interact at the site-specific

level to produce the Design Vision for the project. This interaction of the various project components is presented diagrammatically in Figure 2-3.

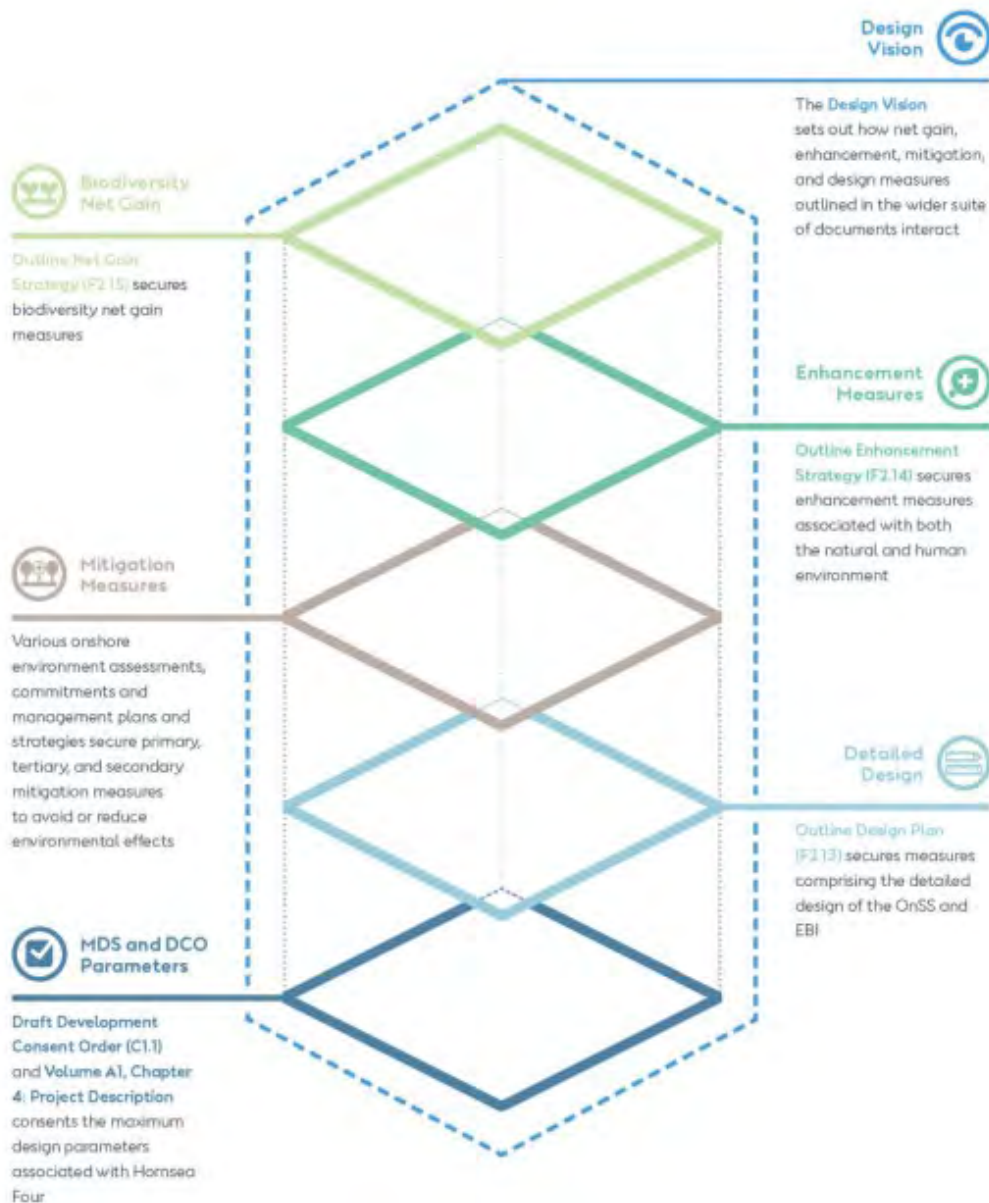


Figure 2-3: Design Vision Overview (example taken from Hornsea Four Offshore Wind farm).

2.2.1.5 In recognition that great infrastructure uses design to solve problems and seeks to maximise the different types of benefits it provides over its whole life, the National Infrastructure Commission (NIC) has identified four design principles to guide the planning and delivery of major projects (NIC Design Group, 2020):

- Climate: Mitigate greenhouse gas emissions and adapt to climate change;
- People: Reflect what society wants and share benefits widely;
- Places: Provide a sense of identity and improve our environment; and

- Value: Achieve multiple benefits and solve problems well.

2.2.1.6 The Isle of Man Design Vision Statement will incorporate these design principles to ensure that the Isle of Man community are at the heart of, and integrated within, the design process, ensuring a positive design legacy from the development. To this end the Design Vision Statement incorporates stakeholder feedback throughout the development process and is a key document submitted at application that communicates how the applicant has due regard for consultation responses and demonstrates how the applicant has had material consideration for these responses. As with the registers, the Design Vision Statement will be consulted upon with key stakeholders via the Evidence Plan process and made publicly available online at key points in the project development (e.g at Scoping and along with the application).

2.3 Developable Area Approach (DAA)

2.3.1.1 In keeping with the approach to Proportionate EIA, due consideration will be given to the size and location (within the exiting offshore Agreement for Lease (AfL) array area) of the final project that will be taken forward in the application for consent. This consideration will be captured internally as a "Developable Area Approach" (DAA), which includes Physical, Biological and Human constraints in refining the developable area, balancing consenting and commercial considerations with technical feasibility for construction.

2.3.1.2 The Applicant shall create opportunities to engage with key stakeholders on the DAA and seek early feedback on the approach. The DAA approach seeks to promote more pro-active and early engagement with relevant stakeholders on refining the site to reduce constraints where possible and provide stakeholders with the opportunity to influence the final shape and size of the project.

2.3.1.3 While the initial requirements of various stakeholders may prove challenging to reconcile with the Applicant's commercial aspirations, the DAA meetings shall seek to progress in a respective manner where open dialogue on the key risks and opportunities are openly discussed.

2.4 Pre-application consultation

2.4.1.1 Pre-application consultation is a key part of the EIA process, helping to identify key issues that need addressing, scoping out others where it is agreed that they are not significant and establishing dialogue and agreements on specific methodologies for assessment, evidence bases etc.

2.4.1.2 All consultation, including technical, community, landowner, other stakeholders and statutory consultation will be recorded and presented within a Consultation Report which shall accompany the application for Marine Infrastructure Consent (MIC). The Consultation Report will demonstrate how the Applicant has had due regard to the relevant responses received.

2.4.1.3 Aligned with the ethos of 'Commit, Consult, Design', the Applicant shall seek to engage actively and openly with a range of key stakeholders throughout the preapplication phase, local information events, the Proportionate EIA Roadshow, Evidence Plan Process, seeking feedback and providing updates at key stages and intervals. Introductory and regular meetings have been held with the Department of Infrastructure (DoI), Department of Environment, Food and Agriculture (DEFA) and others throughout late-2022 and 2023.

2.4.1.4 The Applicant shall prepare a Community Engagement, Consultation and Action Strategy (CECAS). The CECAS is a requirement of the Isle of Man Offshore Wind Farm Project Agreement for Lease (AfL) which shall set out how the Applicant plans to

consult local communities on the proposed development. The Applicant shall consult on the contents of the CECAS with the Isle of Man authorities as part of the Scoping Report.

3 The Design Envelope approach

3.1.1.1 At this stage in the Project's development process, decisions on exact locations of infrastructure, precise technologies, and construction methods that will be employed have not been made. Due to this, a design envelope approach (often referred to as the 'Rochdale Envelope') has been used to provide certainty that the final project as built will not exceed identified parameters, whilst providing flexibility to accommodate necessary further project refinement during the detail design phase post-consent. Using a combination of proportionate EIA and a design envelope will ensure that the overall approach to EIA and the final Environmental Statement (ES) is both transparent and comprehensive, resulting in all appropriate design options being considered and conclusions that are robust.

3.2 Background and definition

3.2.1.1 The design envelope approach has been fully developed into UK Planning Law and is frequently used in the planning application process of Nationally Significant Infrastructure Projects (NSIPs) since their introduction in 2008. Its most recognised definition comes from the Planning Inspectorate (PINS) Advice Note Nine: Rochdale Envelope (PINS, 2018) which in Paragraph 1.2 states that:

"The 'Rochdale Envelope' approach is employed where the nature of the Proposed Development means that some details of the whole project have not been confirmed (for instance the precise dimensions of structures) when the application is submitted, and flexibility is sought to address uncertainty. Such an approach has been used under other consenting regimes (the Town and Country Planning Act 1990 and the Electricity Act 1989) where an application has been made at a time when the details of a project have not been resolved".

3.2.1.2 To inform the assessments, a range of parameters for each aspect of the project has been defined (the design envelope) with a Maximum Design Scenario (MDS) identified for each potential effect that has been assessed. So, whilst the design envelope is broad enough to encompass the potential variations in design and other aspects of the Isle of Man Offshore Wind Farm Project, the MDS ensures that assessment is based on a likely worst-case approach, specific to the impact and associated effect being assessed.

3.2.1.3 For each aspect of the project, the maximum design parameter shall be defined and used in each impact assessment. This provides confidence that the EIA process robustly considers the likely worst-case impact of the project on each aspect of the environment, whilst also allowing the project to be optimised and refined at the time of construction noting that this may be several years after the final MIC submission is made and granted. The project design envelope therefore provides the maximum extent of the consent sought. The detailed design of the project can then be developed, refined and procured within this consented envelope prior to construction.

3.2.1.4 The technical chapters of the Scoping Report, and resultant Environmental Statement (ES), shall contain MDSs for each of the potential effects assessed, with MDSs for each effect considered during the EIA process presented in the Impacts Register.

3.3 Potential risks to proportionate EIA and solutions

3.3.1.1 Over time, EIA practice has become more complex and involved, with very lengthy Environmental Statements being produced which arguably consider every conceivable possible impact rather than focussing on those impacts that are LSE as required in the EIA Directive and Regulations. As a result, many EIAs can be unfocussed with key findings inaccessible. As noted by the Institute of Environmental Management and Assessment (IEMA, 2017), delivering proportionate EIA is a key issue for both the United

Kingdom planning and consenting system and developers seeking to progress projects. The Applicant is proposing early and positive steps towards embracing the concept of proportionality in EIA with discussion with the Isle of Man Government welcomed and actively sought.

- 3.3.1.2 Using a design envelope could potentially increase the risk of developing disproportionate EIA. Within Advice Note Nine, the planning inspectorate further advises that “the more detailed the DCO application is, the easier it will be to ensure compliance with the Regulations”. This may be the case, however IEMA argues that disproportionate EIA is partially caused by EIA practitioners including unnecessary detail to avoid legal challenge (IEMA, 2017). In addition to this, due to the use of parameters with minimum and maximum values creates the need to discuss multiple scenarios rather than just one fixed design. This again means that unnecessary information could potentially be included within the final EIA. To try and reduce this, IEMA advises that those who are conducting EIA’s and completing DCO applications should ensure that each element included is justified so that even if the EIA remains long and extensive it is entirely relevant.
- 3.3.1.3 To help combat these potential issues, as described in there are multiple documents that have been utilised to ensure that proportionate EIA is delivered. These documents are structured in a way that means that only relevant information regarding impacts, commitments and application documents is included.
- 3.3.1.4 The EIA for the Isle of Man Offshore Wind Farm Project will adopt a format which is “Uniquely Manx”, by adopting tailor made approaches (Proportionate EIA) to the Isle of Man stakeholders that combine best practice (Design Envelope) and innovation.



Figure 3-1: Uniquely Manx Logo.

4 References

- Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope, National Infrastructure Planning. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/> (Accessed: March 24, 2023).
- Caine, C.A. (2018) "The place of the Rochdale envelope approach in offshore renewable energy," *Environmental Law Review*, 20(2), pp. 74–88. Available at: <https://doi.org/10.1177/1461452918777835>.
- IEMA (2016) Guide to: Delivering Quality Development [online]. Lincoln: IEMA – Delivering Quality Assessment [Accessed August 2023].
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Moor Vannin Offshore Wind Farm Scoping Report

Annex 5.B Impacts Register

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Accepted	Francesca De Vita & John Galloway, Orsted, October 2023
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Moor Vannin

1. Impacts Register Explained



Consent		Description							EIA Scoping			Environmental Statement (Example)					
Impact Background									Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence	Project position at ES	Justification for position at ES	Magnitude at ES	Sensitivity at ES	Likely Significant Effect at ES?	
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments									
DCO / MIC or Both	Unique ID for each impact which can be used to refer between those impacts in the ES and those in the Impact Register.	Identifies that part of the Moor Vannin development where the impact is anticipated to arise.	Identifies the phase of the Moor Vannin development, i.e. when the impact is anticipated to arise.	The impact and the activity that the impact arises from.	The Maximum Design Scenario (MDS) as defined by the technical consultant accounting for the Project Description at Scoping for the specific impact and activity.	The justification of why the MDS as defined is the MDS, providing reference to other development scenarios or options.	The receptors identified that may be effected by the impact.	Commitments that are relevant to reduce and/or eliminate Likely Significant Effects (LSE). Primary (Design) or Tertiary (Inherent) are commitments that are embedded within the assessment at the relevant point in the EIA. Secondary commitments may be incorporated to reduce LSE to acceptable levels following assessment.	Presents the findings of the EIA at Scoping. Assessed as LSE or No LSE.	Proposed process for presenting further evidence or assessment via either the ES (for LSE impacts) or the EPP (No LSE impacts).	Presents either: Any further baseline data or modelling to be collected or undertaken to inform assessments; or Position Papers to be provided through EPP.	Identifies the approach taken to the impact within the ES.	Details the justification for the projects approach taken to the Impact at Scoping.	Identifies the expected magnitude of the impact considered within the ES, derived from topic-specific criteria.	Identifies the sensitivity of the receptor considered within the ES, derived from topic-specific criteria.	Presents the findings of the EIA within the ES.	
Example	MIC	BE-02	All-Offshore	Operation	Long term seabed habitat loss/ disturbance due the presence of structures.	Presence of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled jacket foundations; Associated scour protection. Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection	The MDS results in the greatest area of seabed affected by the presence of infrastructure.	Seabed habitats and sensitive species.	Tertiary. Co7	LSE	Assessed in ES.	Site-specific benthic survey data.	LSE	Scoped into assessment at ES based on Scoping Opinion (DoI Scoping Opinion, Month 20XX, ID:X).	Minor	Medium	No significant effect (Slight adverse)

Impact Background+B2:I10F5B2:I9B2:I13B2:I12B2:I11B2:I12B2:I10B2:I13B2:I12B2:I13B2:I10								
Consent	ID	Project Element	Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	MP-01	All offshore	Construction, operation and Decommissioning	Increases in suspended sediment concentrations as a result of seabed preparation, cable installation, cable repair/replacement and decommissioning (pathway).	Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cable Cables installed using Mass Flow Excavation (or similar); and Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest volume of excavated and/or disturbed seabed sediment.	N/A (pathway)	Primary: Co3 Tertiary: Co2 Co6
MIC	MP-02	All offshore	Construction, operation and Decommissioning	Deposition of sediments resulting in bed level changes as a result of seabed preparation, cable installation, cable repair/replacement and decommissioning (pathway).	Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cable Cables installed using Mass Flow Excavation (or similar); and Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest volume of excavated and/or disturbed seabed sediment.	N/A (pathway)	Primary: Co3 Tertiary: Co2 Co6
MIC	MP-03	All offshore	Construction and Decommissioning	Modifications to seabed morphology as a result of seabed preparation, cable installation and decommissioning (pathway).	Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cable Cables installed using Mass Flow Excavation (or similar); and Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest disturbance to the seabed.	N/A (pathway)	Primary: Co3 Tertiary: Co2 Co6
MIC	MP-04	All offshore	Construction and Decommissioning	Subsequent effects on sandbanks and notable bathymetric depressions as a result of seabed preparation, cable installation and decommissioning.	Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cable Cables installed using Mass Flow Excavation (or similar); and Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest disturbance to the seabed.	Seabed features	Primary: Co3 Tertiary: Co2 Co6
MIC	MP-05	Landfall	Construction and Decommissioning	Modifications to littoral transport at landfall (pathway) as a result of the installation and decommissioning of cables at landfall.	Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest potential for interaction with the seabed at landfall.	N/A (pathway)	Primary: Co3
MIC	MP-06	Landfall	Construction and Decommissioning	Subsequent effects on coastal behaviour and morphology at landfall.	Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest potential for interaction with the seabed at landfall.	The coastline at the proposed landfall location.	Primary: Co3
MIC	MP-07	All offshore	Operation	Modification of the wave and tidal regime due to the presence of structures (pathway).	Presence of up to 100 WTGs on gravity based foundations; Presence of up to 5 OSSs on piled foundations; and Presence of cable and scour protection.	The MDS is based on the largest foundation types which have the greatest potential for blockage effects.	N/A (pathway)	Primary: Co3 Tertiary: Co2
MIC	MP-08	All offshore	Operation	Subsequent modifications to the sediment transport regime due to the presence of structures(pathway).	Presence of up to 100 WTGs on gravity based foundations; Presence of up to 5 OSSs on piled foundations; and Presence of cable and scour protection.	The MDS is based on the largest foundation types which have the greatest potential for blockage effects, with subsequent effects on the sediment transport regime.	N/A (pathway)	Primary: Co3 Tertiary: Co2
MIC	MP-09	All offshore	Operation	Subsequent modifications to seabed morphology due to the presence of structures (pathway).	Presence of up to 100 WTGs on gravity based foundations; Presence of up to 5 OSSs on piled foundations; and Presence of cable and scour protection.	The MDS is based on the largest foundation types which have the greatest potential for blockage effects, with subsequent effects on seabed morphology..	N/A (pathway)	Primary: Co3 Tertiary: Co2

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further Evidence
No LSE (pathway)	Assessed in ES.	A validated hydrodynamic model will be developed to investigate sediment plume scenarios.
No LSE (pathway)	Assessed in ES.	A validated hydrodynamic model will be developed to investigate sediment plume scenarios.
No LSE (pathway)	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
No LSE (pathway)	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
No LSE (pathway)	Assessed in ES.	A validated hydrodynamic model will be developed to investigate potential impacts to the wave and tidal regime.
No LSE (pathway)	Assessed in ES.	A validated hydrodynamic model will be developed to investigate potential impacts to the wave and tidal regime.
No LSE (pathway)	Assessed in ES.	A validated hydrodynamic model will be developed to investigate potential impacts to the wave and tidal regime.

Impact Background+B2:I10F5B2:I9B2:I13B2:I12B2:I11B2:I12B2:I10B2:I13B2:I12B2:I13B2:I10								
Consent	ID	Project Element	Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	MP-10	All offshore	Operation	Subsequent effects due to the presence of structures on the coastline.	Presence of up to 100 WTGs on gravity based foundations; Presence of up to 5 OSSs on piled foundations; and Presence of cable and scour protection.	The MDS is based on the largest foundation types which have the greatest potential for blockage effects, with subsequent effects on seabed morphology..	The eastern coastline of the Isle of Man.	<u>Primary:</u> Co3 <u>Tertiary:</u> Co2
MIC	MP-11	All offshore	Operation	Scouring of the seabed due to the presence of structures (pathway)	Presence of up to 100 WTGs on gravity based foundations; and Presence of up to 5 OSSs on piled foundations.	The MDS is based on the largest foundation types which have the greatest potential for scour. The MDS excludes secondary scour around scour protection material.	N/A (pathway)	<u>Primary:</u> Co3 <u>Tertiary:</u> Co2
MIC	MP-12	Array	Operation	Modifications to stratification and frontal features due to the presence of structures.	Presence of up to 100 WTGs on gravity based foundations; Presence of up to 5 OSSs on piled jacket foundations; and Presence of cable and scour protection.	The MDS is based on the largest foundation types which have the greatest potential for blockage effects.	The Irish Sea frontal system.	<u>Primary:</u> Co3 <u>Tertiary:</u> Co2
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above.	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above.	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above.	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further Evidence
LSE	Assessed in ES.	A validated hydrodynamic model will be developed to investigate potential impacts to the wave and tidal regime.
No LSE (pathway)	Assessed in ES.	N/A
No LSE	Further evidence to be provided via the Evidence Plan process.	A baseline description including characterisation of the Irish Sea frontal system.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	WQ-01	All offshore	Construction, operation and Decommissioning	Deterioration in water quality due to suspension/re-suspension of sediments resulting from seabed preparation, cable installation, cable repair/replacement and decommissioning.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for increases in suspended sediments.	Designated and non-designated bathing waters.	Tertiary Co1 Co2 Co4 Co6 Co7
MIC	WQ-02	All offshore	Construction, operation and Decommissioning	Release of sediment-bound contaminants from disturbed sediments resulting from seabed preparation, cable installation, cable repair/replacement and decommissioning.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for increases in suspended sediments, combined with the identification of contaminant levels from site-specific contaminants analysis.	Designated and non-designated bathing waters.	Tertiary Co4 Co6 Co7
MIC	WQ-03	Landfall	Construction	Deterioration in water clarity due to the release of drilling mud during cable installation at landfall.	Landfall infrastructure installed in the intertidal using trenchless techniques (including HDD).	The MDS results in the potential release of drilling mud from cable installation at landfall.	Designated and non-designated bathing waters.	Tertiary Co4 Co7
MIC	WQ-04	All offshore	Construction, operation and Decommissioning	Accidental releases or spills of materials or chemicals during construction, operation and decommissioning.	Vessel traffic associated with construction, operational and decommissioning activities	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for accidental pollution.	Designated and non-designated bathing waters.	Tertiary Co4 Co7
MIC	WQ-05	All offshore	Operation	Deterioration in water quality due to re-suspension of sediments and contaminants resulting from scour around foundations during operation.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for increases in suspended sediments, combined with the identification of contaminant levels from site-specific contaminants analysis.	N/A as no LSE.	Tertiary Co1
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further Evidence
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	Site-specific sediment contaminants analysis.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
No LSE	Further evidence to be provided via the Evidence Plan process.	Presentation of information regarding the low likelihood of secondary scour.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	O-01	All offshore and Landfall	Construction and Decommissioning	Temporary habitat loss/ disturbance and displacement due to vessel activity during construction and decommissioning.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for accidental pollution.	Guillemot; Razorbill; Red-throated diver.	Tertiary Co6 Co7
MIC	O-02	All offshore and Landfall	Construction, Operation and Decommissioning	Reduced prey availability due to indirect effects on prey species and habitats.	See Impacts Register for Benthic Subtidal and Intertidal Ecology, and Fish and Shellfish Ecology.	MDS defined by impacts to prey species.	All seabird species.	Tertiary Co4 Co6 Co34
MIC	O-03	Array	Operation	Disturbance and displacement due to WTG presence.	Presence of up to 100 WTGs.	The MDS results in the greatest potential for disturbance from WTGs.	Guillemot; Razorbill; Red-throated diver.	Tertiary Co7
MIC	O-04	Array	Operation	Mortality due to risk of collision with WTGs.	Presence of up to 100 WTGs.	The MDS results in the greatest potential for disturbance from WTGs.	Kittiwake; Great black-backed gull; Herring gull; Lesser black-backed gull; Gannet	Tertiary Co7
MIC	O-05	Array	Operation	Barrier effects due to WTG presence.	Presence of up to 100 WTGs.	The MDS results in the greatest potential for disturbance from WTGs.	N/A as no LSE.	Tertiary Co7
MIC	O-06	All offshore	Construction, operation and Decommissioning	Accidental releases or spills of materials or chemicals during construction, operation and decommissioning.	Vessel traffic associated with construction, operational and decommissioning activities	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for accidental pollution.	All seabird species.	Tertiary Co4 Co6 Co7
MIC	O-07	Array	Operation	Attraction to lit structures by migrating birds.	Presence of up to 100 WTGs and up to 5 OSSs.	The MDS results in the greatest number of lit structures.	All seabird species.	Tertiary Co7
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Analysis and presentation of 24 months of Digital Aerial Survey data.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	Analysis and presentation of 24 months of Digital Aerial Survey data.
LSE	Assessed in ES.	Analysis and presentation of 24 months of Digital Aerial Survey data.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of assessment methodology note that incorporates consideration of barrier effects within the disturbance/displacement assessment
LSE	Assessed in ES.	N/A
Low - impacts are expected to be minimal, with limited evidence on the impacts of artificial light on birds.	Assessed in ES.	Analysis and presentation of 24 months of Digital Aerial Survey data.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	BE-01	All offshore	Construction, Operation and Decommissioning	Temporary seabed habitat loss/ disturbance.	Seabed preparation for: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on gravity based foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cable; Cables installed using Mass Flow Excavation (or similar); and Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest area of seabed disturbed.	Seabed habitats and sensitive species.	Tertiary Co6 Co7
MIC	BE-02	All offshore	Operation	Long term seabed habitat loss/ disturbance due to the presence of structures.	Presence of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on gravity based foundations; Associated scour protection. Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cable; Associated cable protection.	The MDS results in the greatest area of seabed affected by the presence of infrastructure.	Seabed habitats and sensitive species.	Tertiary Co7
MIC	BE-03	All offshore	Construction and Decommissioning	Temporary increase in suspended sediment concentration due to suspension/ re-suspension of sediments as a result of seabed preparation, cable installation and decommissioning.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for increases in suspended sediments.	Seabed habitats and sensitive species.	Tertiary Co2 Co7
MIC	BE-04	All offshore	Construction and Decommissioning	Subsequent deposition of suspended/ re-suspended sediments as a result of seabed preparation, cable installation and decommissioning.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for subsequent deposition of suspended/ re-suspended sediments.	Seabed habitats and sensitive species.	Tertiary Co2 Co7
MIC	BE-05	All offshore	Construction	The release of sediment contaminants due to suspension/ re-suspension of sediments as a result of seabed preparation and cable installation.	See Impacts Register for Marine Water and Sediment Quality.	The MDS is defined by the identification of pathway for increases in suspended sediments, combined with the identification of contaminant levels from site-specific contaminants analysis.	Seabed habitats and sensitive species.	Tertiary Co4
MIC	BE-06	All offshore	Construction, Operation and Decommissioning	Increased risk of introduction and/or spread of Marine Invasive Non-Native Species (MINNS) due to increased vessel traffic.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for introduction and/or spread of MINNS.	Seabed habitats and sensitive species.	Tertiary Co1
MIC	BE-07	Array area	Construction	Particle motion effects from foundation installation.	Up to 100 WTGs on monopile foundations; Up to 5 OSSs on piled foundations; Installation using percussive piling; Clearance of UXO by low and/or high order detonation.	The MDS results in the greatest number of foundations with the greatest potential for underwater noise propagation.	N/A as no LSE.	Tertiary Co2 Co7
MIC	BE-08	All offshore	Construction, operation and Decommissioning	Accidental releases or spills of construction materials or chemicals from vessels.	Vessel traffic associated with construction, operational and decommissioning activities	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for accidental pollution.	Seabed habitats and sensitive species.	Tertiary Co4
MIC	BE-09	All offshore	Operation	Colonisation of hard surfaces leading to a localised change in biodiversity.	Presence of: Up to 100 WTGs on gravity-based foundations; Up to 5 OSSs on multi-leg jacket foundations; Associated scour protection; and Cable protection.	The MDS identifies the greatest potential for new hard substrate habitat creation in terms of surface area.	Seabed habitats and sensitive species.	Tertiary Co2 Co7

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Site-specific benthic survey data.
LSE	Assessed in ES.	Site-specific benthic survey data.
LSE	Assessed in ES.	Numerical modelling to investigate sediment plume scenarios.
LSE	Assessed in ES.	Numerical modelling to investigate sediment plume scenarios.
LSE	Assessed in ES.	Numerical modelling to investigate sediment plume scenarios.
LSE	Assessed in ES.	Site-specific benthic survey data.
No LSE (further evidence).	Further evidence to be provided via the Evidence Plan process.	Provision of note on particle motion effects on benthic receptors.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	BE-10	All offshore	Operation	Disturbance due to Electro-Magnetic Fields caused by subsea cables.	Presence of up to: Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables	Maximum length of cables installed.	N/A as no LSE.	<u>Primary</u> Co3
MIC	BE-11	All offshore	Decommissioning	Habitat loss due to the removal of colonised hard surface structures.	Removal of: Up to 100 WTGs on gravity-based foundations; Up to 5 OSSs on multi-leg jacket foundations; Associated scour protection; and Cable protection.	The MDS identifies the greatest surface area of hard substrate habitat to be removed.	Seabed habitats and sensitive species.	<u>Tertiary</u> Co6
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
No LSE (further evidence).	Further evidence to be provided via the Evidence Plan process.	Provision of note on EMF effects on benthic receptors.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background									
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments	
MIC	MM-01	All offshore	Construction	Permanent Threshold Shift caused by the generation of underwater noise from construction activities.	Up to 100 WTGs on monopile foundations; Up to 5 OSSs on piled foundations; Installation using percussive piling; Clearance of UXO by low and/or high order detonation.	The MDS results in the greatest number of foundations with the greatest potential for underwater noise propagation.	All marine mammal species.	Tertiary Co7 Co16 Co34	
MIC	MM-02	All offshore	Construction	Temporary Threshold Shift caused by the generation of underwater noise from construction activities.	Up to 100 WTGs on monopile foundations; Up to 5 OSSs on piled foundations; Installation using percussive piling; Clearance of UXO by low and/or high order detonation.	The MDS results in the greatest number of foundations with the greatest potential for underwater noise propagation.	All marine mammal species.	Tertiary Co7 Co16 Co34	
MIC	MM-03	All offshore	Construction	Disturbance due to underwater noise generated during construction.	Up to 100 WTGs on monopile foundations; Up to 5 OSSs on piled foundations; Installation using percussive piling; Clearance of UXO by low and/or high order detonation.	The MDS results in the greatest number of foundations with the greatest potential for underwater noise propagation.	All marine mammal species.	Tertiary Co16 Co34	
MIC	MM-04	All offshore	Construction and Decommissioning	Disturbance due to vessel presence associated with construction and decommissioning.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number of structures, maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for disturbance	All marine mammal species.	Tertiary Co6 Co7	
MIC	MM-05	All offshore	Operation	Disturbance due to operational WTG noise.	Up to 100 WTGs on monopile foundations.	The MDS results in the greatest number of WTGs with the greatest potential for underwater noise propagation.	N/A as no LSE.	Tertiary Co7	
MIC	MM-06	All offshore	Construction, Operation and Decommissioning	Vessel collision risk due to vessel activity associated with construction, operation and decommissioning activities.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number of structures, maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for collision.	All marine mammal species.	Tertiary Co6 Co7	
MIC	MM-07	All offshore	Construction, Operation and Decommissioning	Indirect effects due to changes in water quality as a result of construction, operation and decommissioning activities.	See Impacts Register for Marine Water and Sediment Quality.	The MDS is defined by the identification of pathway for increases in suspended sediments, combined with the identification of contaminant levels from site-specific contaminants analysis.	All marine mammal species.	Tertiary Co4 Co6	
MIC	MM-08	All offshore	Construction, Operation and Decommissioning	Indirect effects due to change in prey abundance/ distribution as a result of construction, operation and decommissioning activities.	See Impacts Register for Benthic Subtidal and Intertidal Ecology, and Fish and Shellfish Ecology.	MDS defined by impacts to prey species.	All marine mammal species.	Tertiary Co4 Co6	
MIC	MM-09	All offshore	Construction and Decommissioning	Accidental releases or spills of construction materials or chemicals during construction and decommissioning.	Vessel traffic associated with construction, operational and decommissioning activities	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for accidental pollution.	All marine mammal species.	Tertiary Co4	
MIC	MM-10	All offshore	Construction, Operation and Decommissioning	Reduction in foraging ability due to temporary increase in SSC and sediment deposition associated with seabed preparation, cable installation, cable repair/replacement and decommissioning.	See Impacts Register for Marine Water and Sediment Quality.	The MDS is defined by the identification of impacts on water quality.	All marine mammal species.	Tertiary Co4 Co6	

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Modelling of piling scenarios to investigate underwater noise impact ranges at defined effect thresholds.
LSE	Assessed in ES.	Modelling of piling scenarios to investigate underwater noise impact ranges at defined effect thresholds.
LSE	Assessed in ES.	Modelling of piling scenarios to investigate underwater noise impact ranges at defined effect thresholds.
LSE	Assessed in ES.	Analysis and presentation of 24 months of Digital Aerial Survey data.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of note on predicted operational noise levels from turbines.
LSE	Assessed in ES.	Analysis and presentation of 24 months of Digital Aerial Survey data.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	MM-11	All offshore	Operation	Disturbance due to Electro-Magnetic Fields generated by subsea cables.	Presence of up to: Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Export Connection Cables	Maximum length of cables installed.	N/A as no LSE.	Primary Co3
MIC	MM-12	Landfall	Construction and Decommissioning	Disturbance to seals due to airborne noise from works at landfall.	Landfall infrastructure installed in the intertidal using open-cut trenching.	MDS defined by most intrusive works at landfall.	Seal species.	Tertiary Co16 Co34
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above.	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above.	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above.	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of note on EMF effects on marine mammal receptors.
LSE	Assessed in ES.	Site-specific data on seal haul-out locations.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	FS-01	All offshore	Construction and Decommissioning	Mortality, injury, behavioural impacts and auditory masking arising from noise and vibration as a result of construction activities.	Up to 100 WTGs on monopile foundations; Up to 5 OSSs on piled foundations; Installation using percussive piling; Clearance of UXO by low and/or high order detonation.	The MDS results in the greatest number of foundations with the greatest potential for underwater noise propagation.	Fish and shellfish receptors; Spawning.	Tertiary Co2 Co6 Co34
MIC	FS-02	All offshore	Construction, Operation & Maintenance and Decommissioning	Direct damage and disturbance to mobile demersal and pelagic fish and shellfish species due to installation of infrastructure on the seabed.	Seabed preparation and presence of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables; and Cables installed using Mass Flow Excavation (or similar).	The MDS results in the greatest area of seabed disturbed.	Fish and shellfish receptors.	Primary Co3 Tertiary Co2 Co6 Co7
MIC	FS-03	All offshore	Construction, Operation & Maintenance and Decommissioning	Increases in Suspended Sediment Concentration due to seabed preparation, cable installation, cable repair/ replacement and decommissioning.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for increases in suspended sediments.	Fish and shellfish receptors.	Tertiary Co2 Co6 Co7
MIC	FS-04	All offshore	Construction, Operation & Maintenance and Decommissioning	Subsequent deposition of sediments suspended/ re-suspended as a result of seabed preparation, cable installation, cable repair/ replacement and decommissioning.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for subsequent deposition of suspended/ re-suspended sediments.	Shellfish; Spawning and nursery habitat.	Tertiary Co2 Co6 Co7
MIC	FS-05	All offshore	Construction, Operation & Maintenance and Decommissioning	Direct and indirect seabed disturbances leading to the release of sediment contaminants suspended/ re-suspended as a result of seabed preparation, cable installation, cable repair/ replacement and decommissioning.	See Impacts Register for Marine Water and Sediment Quality.	The MDS is defined by the identification of pathway for increases in suspended sediments, combined with the identification of contaminant levels from site-specific contaminants analysis.	Fish and shellfish receptors.	Tertiary Co2 Co6 Co7
MIC	FS-06	All offshore	Construction, Operation & Maintenance and Decommissioning	Accidental releases or spills of construction materials or chemicals from vessels.	Vessel traffic associated with construction, operational and decommissioning activities	The MDS identifies the maximum number of structures maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for accidental pollution.	Fish and shellfish receptors.	Tertiary Co4
MIC	FS-07	Array	Construction and Decommissioning and Operation & Maintenance	Effects on fish and shellfish receptors as a result of change in fishing pressure.	See Impacts Register for Commercial Fisheries.	the MDS is defined by the changes to fishing activity/intensity.	Commercial fish and shellfish receptors.	N/A
MIC	FS-08	All offshore	Construction and Decommissioning and Operation & Maintenance	Temporary seabed habitat loss/ disturbance as a result of seabed preparation, cable installation, cable repair/ replacement and decommissioning.	Seabed preparation for: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables; Cables installed using Mass Flow Excavation (or similar); and Landfall infrastructure installed in the intertidal using open-cut trenching.	The MDS results in the greatest area of seabed disturbed.	Fish and shellfish receptors; Spawning and nursery habitat.	Tertiary Co2
MIC	FS-09	All offshore	Operation	Effects of underwater noise from operational WTGs.	Up to 100 WTGs on monopile foundations.	The MDS results in the greatest number of WTGs with the greatest potential for underwater noise propagation.	N/A as no LSE.	N/A

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Modelling of piling scenarios to investigate underwater noise impact ranges at defined effect thresholds.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	Numerical modelling to investigate sediment plume scenarios.
LSE	Assessed in ES.	Numerical modelling to investigate sediment plume scenarios.
LSE	Assessed in ES.	Site-specific sediment contaminants analysis.
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of note on predicted operational noise levels from turbines.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	FS-10	All offshore	Operation	Permanent and/or long-term habitat loss/alteration due to the addition of structures.	Presence of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on gravity based foundations; Associated scour protection. Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Associated cable protection.	The MDS results in the greatest area of seabed affected by the presence of infrastructure.	Fish and shellfish receptors.	Tertiary Co2
MIC	FS-11	All offshore	Operation	Disturbance due to Electro-Magnetic Fields from subsea cables.	Presence of up to: Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables;	Maximum length of cables installed.	N/A as no LSE.	Primary Co3
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	N/A
No LSE	Further evidence to be provided via the Evidence Plan process.	Provison of note on EMF effects on fish and shellfish receptors.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	CF-01	All offshore	Construction, Operation and Decommissioning	Reduction in access to, or exclusion from established fishing grounds due to the presence of infrastructure.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring additional protection. Up to 125 km of export cables and up to 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; and Decommissioning of the site to remove all offshore infrastructure above the seabed.	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for reduction in access.	Scallop dredgers; Potting vessels; Otter trawlers; Beam trawlers; Pelagic trawlers Vessels using handlines.	Tertiary Co5 Co6 Co8 Co29 Co30
MIC	CF-02	All offshore	Construction, Operation and Decommissioning	Displacement leading to gear conflict and increased fishing pressure on adjacent grounds due to the presence of infrastructure.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring additional protection. Up to 125 km of export cables and up to 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; and Decommissioning of the site to remove all offshore infrastructure above the seabed.	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for displacement.	Scallop dredgers; Potting vessels; Otter trawlers; Beam trawlers; Pelagic trawlers Vessels using handlines.	Tertiary Co5 Co6 Co8 Co29 Co30
MIC	CF-03	All offshore	Construction, Operation and Decommissioning	Displacement or disruption of commercially important fish and shellfish resources due to impacts on target species.	See Impacts Register for Fish and Shellfish Ecology.	The MDS is defined by impacts to the fish and shellfish resource, as defined within the Fish and Shellfish Ecology chapter.	Scallop dredgers; Potting vessels; Otter trawlers; Beam trawlers; Pelagic trawlers Vessels using handlines.	Tertiary Co5 Co6 Co8 Co29 Co30
MIC	CF-04	All offshore	Construction, Operation and Decommissioning	Physical presence of infrastructure leading to gear snagging.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring cable protection; and Up to 125 km of export cables and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection;	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for gear snagging.	Scallop dredgers; Potting vessels; Otter trawlers; Beam trawlers; Pelagic trawlers Vessels using handlines.	Tertiary Co5 Co6 Co8 Co29 Co30
MIC	CF-05	All offshore	Construction, Operation and Decommissioning	Additional steaming to alternative fishing grounds due to presence of infrastructure.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring additional protection. Up to 125 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; and Decommissioning of the site to remove all offshore infrastructure above the seabed.	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for additional steaming.	Scallop dredgers; Potting vessels; Otter trawlers; Beam trawlers; Pelagic trawlers Vessels using handlines.	Tertiary Co5 Co6 Co8 Co29 Co30

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Data requests to Isle of Man Government for commercial fisheries data including landings statistics and VMS data, including iVMS where available.
LSE	Assessed in ES.	Data requests to Isle of Man Government for commercial fisheries data including landings statistics and VMS data, including iVMS where available.
LSE	Assessed in ES.	Data requests to Isle of Man Government for commercial fisheries data including landings statistics and VMS data, including iVMS where available.
LSE	Assessed in ES.	Data requests to Isle of Man Government for commercial fisheries data including landings statistics and VMS data, including iVMS where available.
LSE	Assessed in ES.	Data requests to Isle of Man Government for commercial fisheries data including landings statistics and VMS data, including iVMS where available.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	CF-06	All offshore	Construction, Operation and Decommissioning	Increased vessel traffic within fishing grounds leading to interference with fishing activity.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number of structures, maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for increased vessel interference.	Scallop dredgers; Potting vessels; Otter trawlers; Beam trawlers; Pelagic trawlers Vessels using handlines.	Tertiary Co5 Co6 Co8 Co29 Co30
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Data requests to Isle of Man Government for commercial fisheries data including landings statistics and VMS data, including iVMS where available.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	SN-01	All offshore	Construction, operation and Decommissioning	Traffic displacement including displacement of 'lifeline' routes due to presence of the offshore array.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring additional protection. Up to 125 km of export cables km and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; Decommissioning of the site to remove all offshore infrastructure above the seabed; and Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for displacement.	Sea users	<u>Primary</u> Co45 <u>Tertiary</u> Co33 Co37 Co43
MIC	SN-02	All offshore	Construction, operation and Decommissioning	Increased vessel to vessel collision risk between third party vessels resulting from displacement due to presence of the offshore array.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring additional protection. Up to 125 km of export cables km and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; Decommissioning of the site to remove all offshore infrastructure above the seabed; and Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for displacement and subsequent increase in collision risk.	Sea users	<u>Primary</u> Co45 <u>Tertiary</u> Co33 Co37 Co43
MIC	SN-03	All offshore	Construction, operation and Decommissioning	Increased vessel to vessel collision risk between a third party vessel and a project vessel.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number of structures, maximum lengths of cable to be installed, requiring the greatest number of vessels and therefore the greatest potential for increased vessel-to-vessel collision risk.	Sea users	<u>Tertiary</u> Co8 Co9 Co32 Co42 Co44
MIC	SN-04	Array (assumes no surface structures with ECC)	Operation (assumes mitigations in place for construction / decomm.)	Vessel to structure allision risk due to the presence of structures.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requir. Up to 125 km export cables and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; and Decommissioning of the site to remove all offshore infrastructure above the seabed.	The MDS identifies the greatest number of structures, and therefore the greatest potential for allision risk.	Sea users	<u>Primary</u> Co45 <u>Tertiary</u> Co33 Co37 Co43

EIA Scoping		
Risk identified as ALARP (no LSE) at Scoping stage?	Proposed Approach	Further evidence
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	SN-05	All offshore	Construction, operation and Decommissioning	Reduced access to local ports due to increased vessel traffic.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options with associated seabed preparation and scour protection; Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requir. Up to 125 km export cables and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection; The regular maintenance of the infrastructure throughout the Proposed Development's lifespan; and Decommissioning of the site to remove all offshore infrastructure above the seabed.	The MDS identifies the greatest physical footprint of development, and therefore the greatest potential for reduction in access.	Sea users	N/A
MIC	SN-06	All offshore	Operation (assumes mitigations in place for construction / decomm.)	Reduction of under keel clearance resulting from cable protection.	Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring cable protection. Up to 125 km of export cables and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection;	The MDS identifies the maximum potential for reduction in navigable depth due to the placement of cable protection.	Sea users	<u>Primary</u> Co3 <u>Tertiary</u> Co2 Co37
MIC	SN-07	All offshore	Operation (assumes mitigations in place for construction / decomm.)	Anchor interaction with subsea cables.	Up to 490 km of inter-array cabling and 100 km of interlink cables, both with up to 15% of the route requiring cable protection. Up to 125 km of export cables and 90 km of Offshore Electrical Connection Cable with up to 15% requiring cable protection;	The MDS identifies the maximum length of cables to be installed and therefore the greatest potential for interaction with anchors.	Sea users	<u>Primary</u> Co3 <u>Tertiary</u> Co2 Co37
MIC	SN-08	All offshore	Operation (assumes mitigations in place for construction / decomm.)	Interference with communications and position fixing equipment due to the presence of WTGs.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options.	The MDS identifies the maximum number of WTGs and therefore the greatest potential for interference.	Sea users	N/A
MIC	SN-09	All offshore	Operation (assumes mitigations in place for construction / decomm.)	Reduction of Search and Rescue (SAR) capability due to increased incident rates and reduced access for surface / air responders.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	The MDS identifies the greatest number of structures, and therefore the greatest potential for reduction in access and SAR capabilities..	Sea users	<u>Tertiary</u> Co35 Co36
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Risk identified as ALARP (no LSE) at Scoping stage?	Proposed Approach	Further evidence
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	MGN 654 Compliant Vessel Traffic Survey.
LSE as per MGN 654 Requirements	Assessed in NRA.	
LSE as per MGN 654 Requirements	Assessed in NRA.	
LSE as per MGN 654 Requirements	Assessed in NRA.	

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	SLV-01	Array	Construction, Operation and Decommissioning	Daytime effects of the offshore array on seascape character receptors.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Seascape character	N/A
MIC	SLV-02	Array	Construction, Operation and Decommissioning	Daytime effects of the offshore array on landscape character receptors.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Landscape character	N/A
MIC	SLV-03	Array	Construction, Operation and Decommissioning	Daytime effects of the offshore array on landscape character or special qualities of designated landscapes.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Designated landscapes	N/A
MIC	SLV-04	Array	Construction, Operation and Decommissioning	Daytime effects of the offshore array on visual receptors.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Visual receptors	N/A
MIC	SLV-05	Array	Operation	Night time effects of the offshore array of the array area lighting on onshore visual receptors.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options, lit in accordance with standard industry requirements; Up to five OSSs within the Offshore Array on one of various fixed foundation options, lit in accordance with standard industry requirements.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Visual receptors	N/A
MIC	SLV-06	ECC	Construction, Operation and Decommissioning	Temporary effects associated with offshore cable installation.	Installation of up to: Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables;	Maximum length of cables installed.	N/A as no LSE	N/A
MIC	SLV-07	Array	Operation	Cumulative impacts of the offshore array and other existing, under construction or consented developments of a similar nature on	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	All SLVIA receptors	N/A
MIC	SLV-08	Array	Operation	Transboundary impacts of the offshore array on seascape receptors when considered together with other existing, under construction or consented stage developments of a similar nature.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Seascape character	N/A
MIC	SLV-09	Array	Operation	Transboundary impacts of the offshore array on landscape receptors when considered together with other existing, under construction or consented stage developments of a similar nature.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Landscape character and designated landscapes	N/A
MIC	SLV-10	Array	Operation	Transboundary impacts of the offshore array on visual receptors when considered together with other existing, under construction or consented stage developments of a similar nature.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five OSSs within the Offshore Array on one of various fixed foundation options.	Maximum number of offshore structures representing the greatest potential for change in visual baseline.	Visual receptors	N/A

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence with regard to temporary nature of effects associated with this impact.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	OA-01	All offshore	Construction, operation and Decommissioning	Direct damage to known and recorded archaeological receptors (maritime or aviation) and/or anomalies of likely/possible anthropogenic origin on or under the seabed due to seabed preparation and the installation of infrastructure.	Seabed preparation for, and installation of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables	The MDS represents the maximum potential for physical interaction with the seabed.	All marine archaeological assets (maritime or aviation) or anomalies (known and recorded)	Tertiary Co38 Co39 Co40 Co41
MIC	OA-02	All offshore	Construction, operation and Decommissioning	Direct damage to potential, currently unrecorded archaeological receptors (maritime or aviation) on or under the seabed due to seabed preparation and installation of infrastructure.	Seabed preparation for, and installation of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables	The MDS represents the maximum potential for physical interaction with the seabed.	Marine archaeological assets (maritime and aviation).	Tertiary Co38 Co39 Co40 Co41
MIC	OA-03	All offshore	Construction, operation and Decommissioning	Direct damage to known and potential palaeogeographic receptors on or under the seabed due to seabed preparation and installation of infrastructure.	Seabed preparation for, and installation of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables	The MDS represents the maximum potential for physical interaction with the seabed.	Palaeogeographic assets including sites and finds.	Tertiary Co38 Co39 Co40 Co41
MIC	OA-04	All offshore	Construction, operation and Decommissioning	Physical disturbance activities causing indirect changes to hydrodynamic and sedimentary regimes leading to sediment reduction on the seabed, potentially exposing all marine archaeological receptors leading to increased rates of deterioration (adverse).	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the change to hydrodynamic and sedimentary regimes and the location of all archaeological receptors/anomalies of likely/anthropogenic origin.	All marine archaeological assets or anomalies (known and recorded)	N/A
MIC	OA-05	All offshore	Construction, operation and Decommissioning	Physical disturbance activities causing indirect changes to hydrodynamic and sedimentary regimes leading to sediment accretion on the seabed, which may cause sediment to cover receptors inhibiting a range of biological, chemical and physical degradation processes (beneficial).	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the change to hydrodynamic and sedimentary regimes and the location of all archaeological receptors/anomalies of known/likely/possible anthropogenic origin.	All marine archaeological assets or anomalies	N/A
MIC	OA-06	All offshore	Construction, operation and Decommissioning	Temporary or permanent change to the setting of heritage receptors, due to the presence of infrastructure, which may affect the significance of such assets.	Presence of of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations.	The MDS is defined by the location of all archaeological receptors/anomalies of likely/possible anthropogenic origin.	All marine archaeological assets or anomalies	N/A
MIC	OA-07	All offshore	Construction, operation and Decommissioning	Temporary or permanent change to the character of the historic seascape due to the presence of infrastructure.	Presence of of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on piled foundations.	The MDS is defined by the maximum potential for the HSC to be impacted by the Proposed Development.	Historic Seascape Character	N/A
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Desk-based assessment (including results of geophysical and geotechnical surveys) and WSI.
No LSE	Further evidence to be provided via the Evidence Plan process.	Desk-based assessment (including results of geophysical and geotechnical surveys) and WSI.
No LSE	Further evidence to be provided via the Evidence Plan process.	Desk-based assessment (including results of geophysical and geotechnical surveys) and WSI.
LSE	Assessed in ES.	Desk-based assessment.
LSE (beneficial)	Assessed in ES.	Desk-based assessment.
LSE	Assessed in ES.	Desk-based assessment.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	AR-10	All offshore	Construction, Operation and Decommissioning	Creation of an aviation obstacle environment due to the presence of WTGs.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five Offshore Substations (OSSs) within the Offshore Array on one of various fixed foundation options.	The MDS identifies the maximum number of offshore structures and therefore the greatest potential for creation of obstacles.	Aircraft.	Tertiary Co33 Co37
MIC	AR-11	Array	Operation	Impact on military and civil aviation PSR systems due to the presence of WTGs.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options.	The MDS identifies the maximum number of turbines and therefore the greatest potential for creation of radar interference.	PSR systems.	Tertiary Co33 Co37
MIC	AR-12	All offshore	Construction, Operation and Decommissioning	Impact to PEXA due physical overlap.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five Offshore Substations (OSSs) within the Offshore Array on one of various fixed foundation options.	The MDS identifies the maximum number of offshore structures and therefore the greatest potential for creation of obstacles.	Military training activities.	Tertiary Co33 Co37
MIC	AR-13	Array	Operation	Impact to SSR systems due to the presence of WTGs.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options.	The MDS identifies the maximum number of turbines and therefore the greatest potential for creation of radar interference.	N/A as no LSE.	Tertiary Co33 Co37
MIC	AR-14	Array	Operation	Impact to Ronaldsway Airport PSR due to the presence of WTGs.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options.	The MDS identifies the maximum number of turbines and therefore the greatest potential for creation of radar interference.	PSR systems.	Tertiary Co33 Co37
MIC	AR-15	Array	Operation	Impact to meteorological radar due to the presence of WTGs.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options.	The MDS identifies the maximum number of turbines and therefore the greatest potential for creation of radar interference.	N/A as no LSE.	Tertiary Co33 Co37
MIC	AR-16	All offshore	Construction, Operation and Decommissioning	Increased air traffic associated with, and displaced by, the Proposed Development may affect available airspace for other users.	Up to 100 Wind Turbine Generators (WTGs) on one of various fixed foundation options; Up to five Offshore Substations (OSSs) within the Offshore Array on one of various fixed foundation options.	The MDS identifies the maximum number of offshore structures and therefore the greatest potential for creation of obstacles.	Aircraft.	Tertiary Co33 Co37
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	Radar Line of Sight analysis.
LSE	Assessed in ES.	Radar Line of Sight analysis.
LSE	Assessed in ES.	Radar Line of Sight analysis.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence regarding potential for effects on SSR.
LSE	Assessed in ES.	Radar Line of Sight analysis.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence regarding potential for effects on meteorological radar.
LSE	Assessed in ES.	Radar Line of Sight analysis.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
MIC	OMU-01	All offshore	Construction, Operation and Decommissioning	Activity or access displacement associated with increased vessel movements associated with the construction, maintenance and decommissioning of WTGs, platforms and export cables.	Vessel traffic associated with construction, operational and decommissioning activities.	The MDS identifies the maximum number vessels and therefore the greatest potential for effects.	Offshore Wind Oil and Gas Cables and Pipelines Marine Disposal Marine Aggregates Military Activity	Tertiary Co5 Co8 Co33 Co37
MIC	OMU-02	All offshore	Construction, Operation and Decommissioning	Activity or access displacement associated with the establishment of safety zones associated with the construction, maintenance and decommissioning of WTGs, platforms and export cables.	500 m safety zones around up to: 100 WTGs; 5 OSSs; and Rolling safety zones around export cable installation vessels.	The MDS is defined by the maximum potential requirement for safety zones.	Offshore Wind Oil and Gas Cables and Pipelines Marine Disposal Marine Aggregates Military Activity	Tertiary Co9
MIC	OMU-03	All offshore	Construction and Decommissioning	Temporary increases in subsea noise due to construction.	Up to 100 WTGs on monopile foundations; Up to 5 OSSs on piled foundations; Installation using percussive piling; Clearance of UXO by low and/or high order detonation.	The MDS results in the greatest number of foundations with the greatest potential for underwater noise propagation.	Offshore recreational activities	Tertiary Co8
MIC	OMU-04	All offshore	Construction and Decommissioning	Direct disturbance and damage to existing assets and infrastructure due to physical overlap.	Seabed preparation for, and installation of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on gravity based foundations; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection Cables	The MDS represents the maximum potential for physical interaction with the seabed.	Oil and Gas Cables and Pipelines	Tertiary Co37
MIC	OMU-05	All offshore	Operation	Physical presence of infrastructure during the operational phase.	Presence of: Up to 100 WTGs on gravity based foundations; Up to 5 OSSs on gravity based foundations; Associated scour protection; Up to 490 km of array cables; Up to 100 km of interlink cables; Up to 125 km of export cables; Up to 90 km of Offshore Electrical Connection cables; Associated cable protection	The MDS identifies the greatest physical footprint of development.	Offshore Wind Oil and Gas Cables and Pipelines Marine Disposal Marine Aggregates Military Activity	Tertiary Co33 Co37
MIC	OMU-06	All offshore	Construction and Decommissioning	Subsequent deposition of suspended/re-suspended sediments due to seabed preparation and installation of infrastructure.	See Impacts Register for Marine Geology, Oceanography and Physical Processes.	The MDS is defined by the identification of pathway for increases in suspended sediments.	Marine Disposal Marine Aggregates	N/A
MIC	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.
MIC	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	N/A
LSE	Assessed in ES.	N/A
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of note on following underwater noise modelling.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of information regarding application of commercial crossing agreements.
LSE	Assessed in ES.	N/A
No LSE	Further evidence to be provided via the Evidence Plan process.	A validated hydrodynamic model will be developed to investigate sediment plume scenarios. Provision of technical note.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	ECO-01	Onshore	Construction	Noise, lighting and visual disturbances on habitats and species caused by physical works and movement of craft/vehicles and personnel.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m. Landfall: Constructed using open cut trenching.	All potential cable route corridor options, OnSS locations and landfall locations need to be considered. Design scenario represents the maximum spatial extent of disturbance to ecological receptors in relation to onshore key parameters.	Birds using the intertidal zone, roosting bats, Douglas Bay MNR.	Primary Co46 Tertiary Co17
TCPA	ECO-02	Onshore	Construction	Habitat loss and disturbance during cable installation, OnSS and landfall.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m. Landfall: Constructed using open cut trenching.	All potential cable route corridor options, OnSS locations and landfall locations need to be considered. Design scenario represents the maximum spatial extent of disturbance to ecological receptors in relation to onshore key parameters.	Urban nesting birds, urban roosting bats, Groulde registered tree area, Groulde Glen wildlife site.	Tertiary Co1 Co15
TCPA	ECO-03	Onshore	O&M	Species disturbance during re-excavation of cable ducts.	Removal of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary decommissioning corridor of up to 60m for removal of cable to occur in.	The MDS results in the greatest area of habitat affected by the presence of infrastructure to be removed.	Habitats and species.	Tertiary Co1 Co15 Co16 Co17
TCPA	ECO-04	Onshore	Decommissioning	Habitat and species disturbance during re-excavation of power cables, OnSS and associated onshore infrastructure during decommissioning.	Removal of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary decommissioning corridor of up to 60m for removal of cable to occur in. Removal of the OnSS and associated infrastructure.	The MDS results in the greatest area of habitat affected by the presence of infrastructure to be removed.	Habitats and species.	Tertiary Co6 Co15
TCPA	TBC	Onshore	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Douglas Bay- Wintering intertidal bird Surveys - two seasons - September to March inclusive. Two visits per month to encompass tide cycles. Desk study data, ie WeBS (BTO Wetland Bird Survey) data and Island wide context data. Groulde Bay- Habitat survey, protected species walk over, likely to trigger bat roost assessment and further surveys.
LSE	Assessed in ES	Routing studies and Habitat survey of cable corridor. Depending on potential impacts species surveys may be required.
LSE	Assessed in ES	Further surveys may be required e.g. wintering birds, depending on the specifics. Monitoring or translocated populations during operational stage as a post construction requirement.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on ecological management actions required to mitigate potential impacts of cable removal.
LSE	As above	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-01	All Onshore	Construction	A reduction to the productivity and/or total yield gained from agriculture land within areas under construction.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Class 3 and Class 3/4 agricultural land	Tertiary Co17
TCPA	LUGC-02	All Onshore	Construction	Construction activities resulting in the closure, whether temporary or permanent, of community land.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Beaches.	Tertiary Co23
TCPA	LUGC-03	All Onshore	Construction	Construction activities resulting in the closure, whether temporary or permanent, of community assets.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Community centres and religious, healthcare and education facilities	Tertiary Co23 Co19

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Information on the final location of onshore infrastructure, presence of agricultural land will determine simple/detailed assessment. A review of the agricultural land Classes which would be impacted, potentially supported with a site walkover survey, assessed against the refined project details in line with the impact to soils. Mitigation, such as an SMP would be considered and targeted to minimise any identified impacts.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-04	All Onshore	Construction	Temporary or permanent closure, severage or disruption of linear recreational routes such as PRoWs, long-distance routes and cycle routes as a result of the installation of the cable route.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45mx80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Raad ny Foillan, PRoWs, tourist routes and cycle paths.	Tertiary Co23 Co19
TCPA	LUGC-05	All Onshore	Construction	Construction of the cable route overlapping areas identified within development plans for securing employment or housing, as well temporary or permanent closures to businesses aimed at providing tourism or recreation (caravan and camping sites).	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45mx80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Tourism and recreational assets.	Tertiary Co17 Co19 Co23

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Information on the final location of onshore infrastructure. Desktop review of recreational routes within the construction corridor and chosen substation site, in consultation with stakeholders. Assessing the current baseline levels against the potential impacts provided with project specific data. The indirect socioeconomic effects related to tourism and recreation would be assessed in the Socio-Economics Chapter.
LSE	Assessed in ES	Information on the final location of onshore infrastructure. Desktop review of tourism and recreational assets within the construction corridor and chosen substation site, in consultation with stakeholders. Assessing the current baseline levels against the potential impacts provided with project specific data. The wider socio-economic effects related to tourism and recreation would be assessed in Chapter 15: Socio-Economics, Tourism and Recreation.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-06	All Onshore	Construction	Direct construction impacts to residential properties within villages, towns, or as individual farm holdings.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Private housing.	Tertiary Co17
TCPA	LUGC-07	All Onshore	Construction	Construction activities resulting in damage to designated geological ASSIs through any ground breaking activities that directly overlap with them within the onshore cable route	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Designated geological ASSIs	Primary Co20
TCPA	LUGC-08	All Onshore	Construction	Construction activities resulting in direct loss of Peatland and carbon rich soils	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Peatland and carbon rich soils	Primary Co20

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Information on the final location of onshore infrastructure. Using publicly available data to give an overview of any residential properties within construction area. This data will be assessed against the potential impacts provided with project specific data. Mitigation for any significant impacts would be sought through consultation with the Isle of Man and stakeholders.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of note detailing how construction activities will not result in the direct loss of Peatland or carbon rich soils.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of note detailing how ASSIs will not be impacted upon during construction.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-09	All Onshore	Construction	Construction activities resulting in impact to soil quality.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Agricultural Soils	Primary Co20
TCPA	LUGC-10	All Onshore	Construction	Construction vehicle movements and creation of haul routes could cause compaction of soil and degrade soil quality	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Agricultural Soils	Tertiary Co17 Primary Co20
TCPA	LUGC-11	All Onshore	Construction	Exposure of workforce to health impacts during construction activities such as trenching, ground collapse, excavations and other earthworks which could disturb contaminants resulting in health risks to construction workers.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Contaminated land	Tertiary Co17 Co19 Primary Co20

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Baseline data review to include identification of different soil classes, Areas of agricultural importance will be identified and their locations described.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-12	All Onshore	Construction	Disturbance / exposure of historic contamination from trenching, excavation and other earthworks, resulting in contamination of non-contaminated areas. Any contamination encountered during the construction phase would be subject to appropriate risk assessment and if necessary, either removed, treated and/ or mitigated as part of the project.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Contaminated land	Tertiary Co17 Primary Co20
TCPA	LUGC-13	All Onshore	Construction	During construction there is potential for accidental spillages and leakages of oils, fuel and other polluting substances which could potentially enter the ground.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Soil	Tertiary Co17
TCPA	LUGC-14	All Onshore	Construction	Where overlaps occur between the permanent onshore cable route and regional geological sites and/or minerals safeguarding areas this could sterilise future resources.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Regional geological sites and minerals safeguarding areas	Primary Co20

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	A simple assessment approach will be adopted involving site walkover and baseline review of potential sources, pathways and receptors. This will feed into the development of a risk-based approach to managing potential contaminated soils during all aspects of construction.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-15	All Onshore	Operation and Maintenance	Permanent loss of agricultural land as a result of the presence of permanent onshore infrastructure, such as the onshore substation	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	In the absence of detailed design information or location, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS.	Class 3 and Class 3/4 agricultural land	Tertiary Co17 Co22
TCPA	LUGC-16	All Onshore	Operation and Maintenance	Loss of agricultural land or productivity as a result of the operational onshore cables.	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Class 3 and Class 3/4 agricultural land	Primary Co21 Co22
TCPA	LUGC-17	All Onshore	Operation and Maintenance	The presence of the onshore substation resulting in the closure, whether temporary or permanent, of community land.	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	In the absence of detailed design information or location, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS.	Beaches.	Tertiary Co22 Co23
TCPA	LUGC-18	All Onshore	Operation and Maintenance	The presence of the onshore cables resulting in the closure, whether temporary or permanent, of community land.	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Beaches.	Primary Co46
TCPA	LUGC-19	All Onshore	Operation and Maintenance	The presence of the onshore substation resulting in the closure, whether temporary or permanent, of community assets (community centres and religious, healthcare and education facilities).	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	In the absence of detailed design information or location, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS.	Community centres and religious, healthcare and education facilities	Tertiary Co23
TCPA	LUGC-20	All Onshore	Operation and Maintenance	The presence of the onshore cables resulting in the closure, whether temporary or permanent, of community assets (community centres and religious, healthcare and education facilities).	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Community centres and religious, healthcare and education facilities	Primary Co21 Co22

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Information on the final location of onshore infrastructure. A review of the agricultural land Classes which would be impacted, potentially supported with a site walkover survey, assessed against the refined project details in line with the impact to soils. Mitigations for permanent losses of agricultural land are currently unknown and will be considered through consultation.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of technical note on Land Use & Ground Conditions
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-21	All Onshore	Operation and Maintenance	The operation and maintenance of the onshore substation resulting in a temporary or permanent closure, severage or disruption of linear recreational routes such as PRoWs, long-distance routes and cycle routes.	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	In the absence of detailed design information or location, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS.	Raad ny Foillan, PRoWs, tourist routes and cycle paths.	Tertiary Co23 Co47
TCPA	LUGC-22	All Onshore	Operation and Maintenance	The operation and maintenance of the onshore cables resulting in a temporary or permanent closure, severage or disruption of linear recreational routes such as PRoWs, long-distance routes and cycle routes.	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Raad ny Foillan, PRoWs, tourist routes and cycle paths.	Primary Co21 Co23 Co47
TCPA	LUGC-23	All Onshore	Operation and Maintenance	The operation and maintenance of the onshore substation resulting in a reduced scale of areas identified within development plans for securing employment or housing, as well temporary or permanent closures to businesses aimed at providing tourism or recreation (caravan and camping sites).	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	In the absence of detailed design information or location, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS.	Tourism and recreational assets.	Tertiary Co23
TCPA	LUGC-24	All Onshore	Operation and Maintenance	The operation and maintenance of the onshore cables resulting in a reduced scale of areas identified within development plans for securing employment or housing, as well temporary or permanent closures to businesses aimed at providing tourism or recreation (caravan and camping sites).	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Tourism and recreational assets.	Primary Co21
TCPA	LUGC-25	All Onshore	Operation and Maintenance	The operation and maintenance of the onshore substation resulting in a direct impact to residential properties within villages, towns, or as individual farm holdings.	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	In the absence of detailed design information or location, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS.	Private housing.	Tertiary Co17
TCPA	LUGC-26	All Onshore	Operation and Maintenance	The operation and maintenance of the onshore cables resulting in a direct impact to residential properties within villages, towns, or as individual farm holdings.	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS and cables.	Private housing.	Primary Co21
TCPA	LUGC-27	All Onshore	Operation and Maintenance	During operation there is potential for accidental spillages and leakages of oils, fuel and other polluting substances which could potentially enter the ground.	The onshore substation would be a permanent construction and remain static, however, could currently be located anywhere within the Scoping Boundary. The cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational OnSS and cables.	Soil	Tertiary Co17

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
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No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LUGC-28	All Onshore	Operation and Maintenance	Where overlaps occur between the permanent onshore cable route and regional geological sites and/or minerals safeguarding areas this could sterilise future resources.	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m. The cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Regional geological sites and minerals safeguarding areas	Primary Co20
TCPA	LUGC-29	All Onshore	Operation and Maintenance	Impact on ground conditions from localised heating impacts from the buried infrastructure	Cables would remain buried throughout the operational phase.	The MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the operational cables.	Ground conditions	Primary Co20
TCPA	LUGC-30	All Onshore	Decommissioning	A repetition or increase in magnitude of the impacts related to the construction activities, throughout the decommissioning phase.	Removal of the onshore substation and underground cables. Expected future increases in processes and technologies, as well as the cost implications involved in unnecessarily intrusive removal techniques have led to the consideration that decommissioning activities would result in similar impacts to the construction phase but to a lesser magnitude.	In the absence of further design information, it is assumed that all onshore infrastructure would be removed resulting in the maximum possible impact, rather than any element remaining in-situ.	Class 3 and Class 3/4 agricultural land	Tertiary Co6.
TCPA	LUGC-31	All Onshore	Cumulative Effects	As per the Construction, Operation and Maintenance, and Decommissioning impacts	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As above	As Above
TCPA	LUGC-32	All Onshore	Transboundary Effects	N/A	As Above	As Above	As Above	As Above
TCPA	LUGC-33	All Onshore	Inter-related Effects	As per the Construction, Operation and Maintenance, and Decommissioning impacts	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how the operation and maintenance elements will look to reduce impact as far as practicable on land use and ground conditions.
LSE	Assessed in ES	An assessment will be undertaken involving baseline review of the geological units and their properties.
No LSE	Further evidence to be provided via the Evidence Plan process.	A note detailing how the decommissioning phase will be undertaken to reduce impacts as far as practicable on land use and ground conditions.
LSE	Assessed in ES	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	Assessed in ES	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	TT-01	Onshore	Construction	Construction traffic movements and location of landfall/substations/construction compounds may result in increases in traffic on the highway network, which may trigger Rules 1 or 2 of the IEMA traffic screening process.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m.	Ensure all potential interactions are assessed	Users of the road network and transportation routes in the Isle of Man	Tertiary Co17 Co19 Co28
TCPA	TT-02	Onshore	Operation	Operational traffic movements may result in increases in traffic, and risk of traffic accidents, on the highway network, which may trigger Rules 1 or 2 of the IEMA traffic screening process.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m. Landfall: Constructed using open cut trenching.	Maximum design scenario represents the maximum spatial extent likely to be affected during the operation of the onshore infrastructure.	Users of the road network and transportation routes in the Isle of Man	Tertiary Co17 Co19 Co28
TCPA	TT-03	Onshore	Construction	Construction impacts related to traffic movements required onshore for the Offshore construction.	Presence of: Up to 100 WTGs on gravity-based foundations; Up to 5 OSSs on multi-leg jacket foundations; Associated scour protection; and Cable protection.	Maximum design scenario represents the maximum spatial extent likely to be affected during the construction of the offshore infrastructure in relation to traffic and transport.	Users of the road network and transportation routes in the Isle of Man	Tertiary Co17 Co28
TCPA	TT-04	Onshore	Construction	Temporary road closures/diversions inc. footways/cycleways may result in increases in traffic on the highway network, which may trigger Rules 1 or 2 of the IEMA traffic screening process.	Installation of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary construction corridor of up to 60m.	The MDS would represent the greatest extent of the proposed construction works which would result in the greatest disruption.	Users of the road network, and footways/cycle ways in the Isle of Man.	Tertiary Co17 Co19 Co23 Co28
TCPA	TT-05	Onshore	Construction	Abnormal loads - The temporary impact of hazardous, dangerous and abnormal loads during construction works.	Installation of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary construction corridor of up to 60m.	The largest load required to be transported to site would require the largest vehicle, therefore having the greatest potential impact upon structures, highway condition, and manoeuvrability	Road network and transportation routes in the Isle of Man	Tertiary Co17 Co19 Co28
TCPA	TBC	Onshore	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Traffic Data required. Study area still TBC
No LSE	Further evidence to be provided via the Evidence Plan process.	Further evidence to be provided via a technical note detailing the operational traffic movements within the defined study area and potential effects. Relevant statutory bodies to be consulted.
No LSE	Further evidence to be provided via the Evidence Plan process.	Further evidence to be provided via a technical note detailing the construction traffic movements within the defined study area and potential effects. Relevant statutory bodies to be consulted.
LSE	Assessed in ES	Assessment of traffic survey data and construction traffic volumes/routes etc. Detailed Assessment
LSE	Assessed in ES	Assessment of construction traffic volumes/routes etc. Detailed Assessment
LSE	As above	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A

Impact Background									EIA Scoping		
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments	Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
TCPA	OAH-01	Onshore	Construction	Direct Effects: Ground disturbance causing the removal / truncation of buried archaeological remains related to onshore cable route and OnSS	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m. OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m2. Max dimensions will be 45mx80m with a max height of 25m.	Design scenario represents the maximum spatial extent of disturbance to potential archaeological remains in relation to onshore cable route and OnSS.	Archaeological remains	Primary Co12 Co46 Tertiary Co13 Co19	LSE	Assessed in ES	Historic Environment Desk-Based Assessment (HEDBA).
TCPA	OAH-02	Onshore	Construction	In-Direct Effects: Short-term change within the setting of designated heritage assets could affect the appreciation of their significance. This could be associated with visual and audible changes associated with construction methodology (heavy plant, movements, etc.) and earthworks associated with cable trenches and OnSS construction.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m. OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m2. Max dimensions will be 45mx80m with a max height of 25m.	Design scenario represents the maximum spatial extent of disturbance to potential designated heritage assets in relation to onshore cable route.	Designated heritage assets	Primary Co12 Co46 Tertiary Co13 Co19	LSE	Assessed in ES	Historic Environment Desk-Based Assessment (HEDBA).
TCPA	OAH-03	Onshore	Operation	In-Direct Effects: Change within the setting of onshore designated heritage assets as a result of OnSS.	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m2. Max dimensions will be 45mx80m with a max height of 25m.	Assumes all heritage assets to be considered within study area of the MDS.	Designated heritage assets	Primary Co12 Tertiary Co13	LSE	Assessed in ES	Historic Environment Desk-Based Assessment (HEDBA).
TCPA	OAH-04	Onshore	Operation	Direct Effects: Potential replacement / repair of cable route; Repair work at OnSS.	Maintenance activities will be categorized into preventive and corrective maintenance. Preventive maintenance will be undertaken in accordance with a planned and routine schedule such as inspections, whereas corrective maintenance is typically reactive and carried out as a repair, replacement or retrofit campaign.	Design scenario represents the possible maintenance of onshore cable. Details of OnSS not known.	Archaeological remains	Tertiary Co13 Co19 Primary Co46	No LSE	Further evidence to be provided via the Evidence Plan process.	Note detailing how operation and maintenance works to be undertaken to ensure no impact resulting on LSE on heritage assets.
TCPA	OAH-05	Onshore	Operation	In-Direct Effects: Short-term change within the setting of designated heritage assets as a result of maintenance activities.	Maintenance activities will be categorized into preventive and corrective maintenance. Preventive maintenance will be undertaken in accordance with a planned and routine schedule such as inspections, whereas corrective maintenance is typically reactive and carried out as a repair, replacement or retrofit campaign.	As above.	Designated heritage assets	Tertiary Co13 Co19 Primary Co46	No LSE	Further evidence to be provided via the Evidence Plan process.	Note detailing how operation and maintenance works to be undertaken to ensure no impact resulting on LSE on heritage assets.
TCPA	OAH-06	Offshore	Operation	In-Direct Effects: Change within the setting of onshore designated heritage assets as a result of WTGs.	Maximum number of WTGs = 100 Maximum rotor diameter = 320m Maximum blade tip height = 385m Minimum blade tip height = 35m	Design scenario represents likely design of WTGs.	Designated heritage assets	None	LSE	Assessed in ES	Historic Environment Desk-Based Assessment (HEDBA).
TCPA	OAH-07	Onshore	Decommissioning	Direct Effects: None. It is anticipated that decommissioning would not necessitate the removal of terrestrial components associated with the buried cable and OnSS.	Decommissioning activities related to onshore infrastructure.	MDS assumes likely area to be affected for decommissioning of works	Archaeological remains	Tertiary Co6	No LSE	Further evidence to be provided via the Evidence Plan process.	Note detailing how decommissioning works will be undertaken to reduce potential for LSE as far as practicable
TCPA	TBC	Onshore	Cumulative Effects	As Above	As Above	As Above	As Above	As above	LSE	As above	N/A
TCPA	TBC	Onshore	Transboundary Effects	As Above	As Above	As Above	As Above	N/A	No LSE	see Transboundary Screening Annex 5.D	N/A
TCPA	TBC	Onshore	Inter-related Effects	N/A	As Above	As Above	As Above	As Above	LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	NV-01	Onshore ECC	Construction	Noise: Construction Phase. Temporary noise from onshore cable route installation (excluding HDD works)	Installation of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary construction corridor of up to 60m. Construction noise levels modelled as an area source measuring 100m by 40m with the source emitting the total logarithmic level of all the sources combined taking into account on-times.	The exact location of the ECC has yet to be defined. Positioning plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co11 Co17
TCPA	NV-02	Onshore ECC	Construction	Noise: Construction Phase. Temporary noise from onshore Horizontal Drilling Works (HDD)	Installation of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary construction corridor of up to 60m. HDD noise levels modelled as an area source measuring 40m by 40m it the source emitting the total logarithmic level of all the sources combined taking into account on-times.	The exact location of the HDD drilling zones not yet defined. Positioning plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-03	Onshore ECC	Construction	Vibration: Construction Phase Temporary vibration from onshore Horizontal Drilling Works (HDD)	HDD Tunnelling and Vibratory piling operating at the extents of the Electrical Connection Search Area RLB.	The exact location of the HDD drilling zones not yet defined. Positioning plant at the extents of the RLB would lead to worst-case predicted vibration levels at the nearest Noise-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-04	Landfall	Construction	Noise: Construction Phase. Temporary noise from landfall construction and cable installation (excluding HDD)	Installation of 3 x 3 single core cables (three per High Voltage Alternating Current (HVAC) circuits and three trenches). A permanent corridor of up to 45m and a temporary construction corridor of up to 60m. Construction noise levels modelled as an area source measuring 100m by 40m with the source emitting the total logarithmic level of all the sources combined taking into account on-times.	The exact location of the landfall has yet to be defined. Positioning plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-05	Landfall	Construction	Vibration: Construction Phase Temporary vibration from onshore Horizontal Drilling Works (HDD) and Cofferdam	HDD Tunnelling and Vibratory piling operating at the extents of the Landfall Boundary. Cofferdam piling operations(if required) located at their closest approach to the nearest receptors to the coastline.	The exact location of the HDD drilling zones to the landfall not yet defined. Positioning plant at the extents of the RLB or at closest approach would lead to worst-case predicted vibration levels at the nearest Vibration-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-06	OnSS	Construction	Noise: Construction Phase. Temporary noise from OnSS construction	The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45mx80m with a max height of 25m. The cables would remain buried throughout the operational phase. Construction noise levels modelled as an area source, the source emitting the total logarithmic level of all the sources combined taking into account on-times.	The exact location of the OnSS has yet to be defined. Positioning plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-07	OnSS	Construction	Vibration: Construction Phase Temporary vibration from piling operation associated with OnSS foundations	Percussive (impact) piling operations at the extents of the RLB	The exact location of the OnSS not yet defined. Positioning percussive piling rig at the extents of the RLB would lead to worst-case predicted vibration levels at the nearest Vibration-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-08	OnSS	Operation	Noise: Operational Phase Permanent noise from the operation of the OnSS	All items of operational plant located at the extents of the RLB	The exact location of the OnSS not yet defined. Positioning OnSS plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors	Human receptors and ecologically sensitive sites.	

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations along the PIER ECC route.
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations along the PIER ECC route.
LSE	Assessed in ES	No further baseline data required.
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations at the landfall PIER boundary.
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations at the landfall PIER boundary.
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations located close to the OnSS.
LSE	Assessed in ES	No further baseline data required.
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations located close to the OnSS.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	NV-09	All onshore	Construction	Noise: Construction Phase Temporary noise from all construction traffic	Based on the results of the traffic assessment changes in AAWT along most effected links to be assessed.	The assessment will consider the worst-case traffic movements along the most affected links, leading to an MDS at the receptors	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co48
TCPA	NV-10	Onshore ECC	Operation	Noise and Vibration: Operational Phase Noise and vibration from the buried cables	Maximum area required for the operation of the buried cables.	The MDS identifies the greatest physical footprint of the buried cables and therefore the greatest impact for impact.		N/A
TCPA	NV-11	Onshore ECC	Decommissioning	Noise and Vibration: Decommissioning Phase Temporary noise and vibration from decommissioning	Excavation of buried cables, removal of OnSS and support infrastructure and removal of offshore array and supporting infrastructure.	The MDS identifies the greatest physical footprint of the Proposed Development and therefore the greatest impact for impact.		Tertiary Co6
TCPA	NV-13	Offshore Array	Operation	Noise: Operational Phase Permanent noise from the operation of the Array	Up to 100 turbines operating simultaneously	Realistic scenario	Human receptors and ecologically sensitive sites.	
TCPA	TBC	Onshore	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	No further baseline data required. Inputs from Traffic assessment.
No LSE	Further evidence to be provided via the Evidence Plan process.	Note detailing how the buried cable during operation phase will not result in significant effects on sensitive receptors.
No LSE	Further evidence to be provided via the Evidence Plan process.	Note detailing how onshore infrastructure will not result in significant effects on sensitive receptors during decommissioning.
LSE	Assessed in ES	No further baseline data required, assessment based on absolute noise limits.
LSE	As above	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	AQ-01	All-Onshore	Construction	Dust generated from onshore construction activities on both human and ecological receptors.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co10 Co17 Co19
TCPA	AQ-02	All-Onshore	Construction	Road traffic movements generated by onshore construction activities on human receptors.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co28
TCPA	AQ-03	All-Onshore	Construction	Road traffic movements generated by onshore construction activities on ecological receptors.	<p>Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown</p> <p>OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m². Max dimensions will be 45m x 80m with a max height of 25m.</p> <p>Landfall: Constructed using open cut trenching.</p>	Ensure all potential interactions are assessed	Ecological receptors.	Tertiary Co17 Co28

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Detailed (to inform extent of dust controls to feed into CoCP)	Technical note on Air Quality
LSE	Assessed in ES	Dependant on availability of air quality data, assessment outcomes and consultation. Established at Scoping
LSE	Assessed in ES	Dependant on availability of air quality data, assessment outcomes and consultation. Established at Scoping

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	AQ-04	All-Onshore	Construction	Emissions generated from NRM used during the construction phase.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co11 Co19
TCPA	AQ-05	All-Onshore	Construction	Emissions generated from offshore vessel movements during the construction phase on onshore receptors.	Onshore cable route: Installed by direct-lay in trenches, or pulled through pre-installed ducting; Up to 9 cables (3 x 3 single core cables); 3 trenches (1 per circuit); Permanent corridor = up to 45m; Temporary construction corridor = up to 60m; Details of route and locations of TJB/JB currently unknown OnSS: The OnSS will consist of one main building, with a max permanent and temporary area of 6,700m ² . Max dimensions will be 45m x 80m with a max height of 25m. Landfall: Constructed using open cut trenching.	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co28
TCPA	AQ-06	All-Onshore	Operation	Road traffic movements generated by onshore operational activities on human receptors.	Associated operational activities for the OnSS.	Ensure all potential interactions are assessed	Human receptors	Tertiary Co5
TCPA	AQ-07	All-Onshore	Operation	Emissions generated from NRM used for maintenance activities during the operational phase.	Associated operational activities for the OnSS.	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co11
TCPA	AQ-08	All-Onshore	Operation	Emissions generated from offshore vessel movements generated by operational activities	Associated operational activities for the OnSS.	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co5
TCPA	AQ-09	All-Onshore	Decommissioning	Decommissioning activities	Activities associated with the decommissioning of the Onshore infrastructure	The MDS identified	Human and ecological receptors.	Tertiary Co6
TCPA	TBC	Onshore	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
TCPA	TBC	Onshore	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Air Quality
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Air Quality
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Air Quality
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note detailing how emissions from offshore vessel movements will be managed.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Air Quality
LSE	As above	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	HFR-08	Onshore	Decommissioning	Generation of turbid runoff which could enter the water environment	Onshore cables installed by direct-lay in trenches, or pulled through pre-installed ducting; there will be up to 9 cables (3 x 3 single core cables); there will be 3 trenches (1 per circuit); permanent corridor up to 45m; temporary construction corridor up to 60m.	The MDS will include the maximum number of cables anticipated to be installed within and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance.	Watercourses	Primary Co46 Tertiary Co6
TCPA	HFR-09	Onshore	Decommissioning	Accidental spillages and leakages of oils, fuel and other polluting substances which could potentially enter the water environment during the decommissioning phase.	Onshore cables installed by direct-lay in trenches, or pulled through pre-installed ducting; there will be up to 9 cables (3 x 3 single core cables); there will be 3 trenches (1 per circuit); permanent corridor up to 45m; temporary construction corridor up to 60m.	The MDS will include the maximum number of cables anticipated to be installed within and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance.	Watercourses	Primary Co46 Tertiary Co6
TCPA	HFR-10	Onshore	Decommissioning	Potential for damage to flood defence or surface water drainage infrastructure	Onshore cables installed by direct-lay in trenches, or pulled through pre-installed ducting; there will be up to 9 cables (3 x 3 single core cables); there will be 3 trenches (1 per circuit); permanent corridor up to 45m; temporary construction corridor up to 60m.	The MDS will include the maximum number of cables anticipated to be installed within and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance.	Flood defences or surface water drainage infrastructure.	Tertiary Co19
TCPA	HFR-11	Onshore	Decommissioning	Pollution or disruption of flow to groundwater through ground excavations or piling.	Onshore cables removed, removal requirements and method currently unknown. Removal of OnSS and other supporting onshore infrastructure.	The MDS will include the maximum number of cables anticipated to be removed and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance. Included area of OnSS	Watercourses	Tertiary Co19
TCPA	HFR-12	Onshore	Decommissioning	Potential for damage to flood defence or surface water drainage infrastructure	Onshore cables removed, removal requirements and method currently unknown. Removal of OnSS and other supporting onshore infrastructure.	The MDS will include the maximum number of cables anticipated to be removed and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance. Included area of OnSS	Watercourses	Tertiary Co19
TCPA		Onshore	Decommissioning	Pollution or disruption of flow to groundwater through ground excavations or piling	Onshore cables removed, removal requirements and method currently unknown. Removal of OnSS and other supporting onshore infrastructure.	The MDS will include the maximum number of cables anticipated to be removed and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance. Included area of OnSS	Ground water	Tertiary Co19
TCPA	HFR-13	All Onshore	Cumulative Effects	As per the Construction, Operation and Maintenance, and Decommissioning impacts	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As above	N/A
TCPA	HFR-14	All Onshore	Transboundary Effects	As per the Construction, Operation and Maintenance, and Decommissioning impacts	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As Above	N/A
TCPA	HFR-15	All Onshore	Inter-related Effects	As per the Construction, Operation and Maintenance, and Decommissioning impacts	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As Above	N/A
TCPA	HFR-16	All Onshore	Inter-related Effects	As per the Construction, Operation and Maintenance, and Decommissioning impacts	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As per the Construction, Operation and Maintenance, and Decommissioning MDS'.	As Above	N/A

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Hydrology and Flood Risk.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Hydrology and Flood Risk.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Hydrology and Flood Risk.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Hydrology and Flood Risk.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Hydrology and Flood Risk.
No LSE	Further evidence to be provided via the Evidence Plan process.	Technical note on Hydrology and Flood Risk.
LSE	N/A	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	N/A	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	LV-01	All onshore project infrastructure	Construction, operation and Decommissioning	Temporary change to landscape character as a result of construction, maintenance and decommissioning activities.	Installation, operation and maintenance, and decommissioning works associated with: Landfall: including up to 3 TJBs (one per circuit); Up to 3 onshore cable circuits installed in a permanent corridor up to 45 m wide, with a temporary construction corridor width of up to 60 m; and A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for onshore infrastructure and therefore the greatest potential for change to landscape and visual amenity.	Landscape character	Primary Co21 Co47 Tertiary Co15
TCPA	LV-02	All onshore project infrastructure	Construction, operation and Decommissioning	Temporary effects on visual receptors as a result of construction, maintenance and decommissioning activities.	Installation, operation and maintenance, and decommissioning works associated with: Landfall: including up to 3 TJBs (one per circuit); Up to 3 onshore cable circuits installed in a permanent corridor up to 45 m wide, with a temporary construction corridor width of up to 60 m; and A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for onshore infrastructure and therefore the greatest potential for change to landscape and visual amenity.	Visual receptors; Visual amenity.	Primary Co21 Co47 Tertiary Co15
TCPA	LV-03	All onshore project infrastructure	Construction, operation and Decommissioning	Temporary changes to landscape character or special qualities of designated landscapes as a result of construction, maintenance and decommissioning activities.	Installation, operation and maintenance, and decommissioning works associated with: Landfall: including up to 3 TJBs (one per circuit); Up to 3 onshore cable circuits installed in a permanent corridor up to 45 m wide, with a temporary construction corridor width of up to 60 m; and A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for onshore infrastructure and therefore the greatest potential for change to landscape and visual amenity.	Designated landscapes	Primary Co21 Co47 Tertiary Co15
TCPA	LV-04	All onshore project infrastructure	Construction, operation and Decommissioning	Temporary changes to physical landscape features as a result of construction, maintenance and decommissioning activities.	Installation, operation and maintenance, and decommissioning works associated with: Landfall: including up to 3 TJBs (one per circuit); Up to 3 onshore cable circuits installed in a permanent corridor up to 45 m wide, with a temporary construction corridor width of up to 60 m; and A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for onshore infrastructure and therefore the greatest potential for change to landscape and visual amenity.	Physical landscape	Primary Co21 Co47 Tertiary Co15
TCPA	LV-05	Onshore Substation	Operation	Long-term changes to landscape character due to the presence of permanent onshore infrastructure	A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for the OnSS and therefore the greatest potential for change to landscape and visual amenity.	Landscape character	Tertiary Co15
TCPA	LV-06	Onshore Substation	Operation	Long-term effects on visual receptors due to the presence of permanent onshore infrastructure.	A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for the OnSS and therefore the greatest potential for change to landscape and visual amenity.	Visual receptors; Visual amenity.	Tertiary Co15
TCPA	LV-07	Onshore Substation	Operation	Long term changes to landscape character or special qualities of designated landscapes due to the presence of permanent inshore infrastructure.	A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for the OnSS and therefore the greatest potential for change to landscape and visual amenity.	Designated landscapes	Tertiary Co15
TCPA	LV-08	Onshore Substation	Operation	Long term changes to physical landscape features due to the presence of permanent inshore infrastructure.	A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for the OnSS and therefore the greatest potential for change to landscape and visual amenity.	Physical landscape	Tertiary Co15
TCPA	LV-09	All onshore project infrastructure	Construction, operation and Decommissioning	Night-time effects on landscape and visual receptors	Installation, operation and maintenance, and decommissioning works associated with: Landfall: including up to 3 TJBs (one per circuit); Up to 3 onshore cable circuits installed in a permanent corridor up to 45 m wide, with a temporary construction corridor width of up to 60 m; and A single OnSS with a permanent footprint of 45x80m and a maximum building height of 25 m.	The maximum envelope for onshore infrastructure and therefore the greatest potential for change to landscape and visual amenity.	Visual receptors; Visual amenity.	Tertiary Co15
TCPA	TBC	All offshore	Cumulative Effects	As above.	As above.	As above	As above.	As above.
TCPA	TBC	All offshore	Transboundary Effects	As above.	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence with regard to temporary nature of effects associated with this effect.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence with regard to temporary nature of effects associated with this effect.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence with regard to temporary nature of effects associated with this effect.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence with regard to temporary nature of effects associated with this effect.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
LSE	Assessed in ES.	Site photography, wirelines and visualisations; ZTV analysis.
No LSE	Further evidence to be provided via the Evidence Plan process.	Provision of further evidence with regard to lighting requirements.
LSE	Assessed in ES.	As above.
No LSE	See Transboundary Screening Annex 5.D	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	TBC	All offshore	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significant Effect identified at Scoping?	Proposed Approach	Further evidence
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
Both	CC-01	All onshore and offshore project infrastructure	Construction, operation and Decommissioning	GHG emissions arising from land-use change during the construction, operation and maintenance and decommissioning phase	Onshore cables installed by direct-lay in trenches, or pulled through pre-installed ducting; there will be up to 9 cables (3 x 3 single core cables); there will be 3 trenches (1 per circuit); permanent corridor up to 45m; temporary construction corridor up to 60m. Offshore the MDS would comprise a maximum number of WTGs = 100 up to 389m in height.	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co19
Both	CC-02	All onshore and offshore project infrastructure	Construction, operation and Decommissioning	The vulnerability and climate resilience of the Project infrastructure during the construction and decommissioning phase.	Onshore cables installed by direct-lay in trenches, or pulled through pre-installed ducting; there will be up to 9 cables (3 x 3 single core cables); there will be 3 trenches (1 per circuit); permanent corridor up to 45m; temporary construction corridor up to 60m. Offshore the MDS would comprise a maximum number of WTGs = 100 up to 389m in height.	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co51
Both	CC-03	All onshore and offshore project infrastructure	Construction	The impact of GHG emissions arising from the manufacturing and installation of the Project.	Onshore cables installed by direct-lay in trenches, or pulled through pre-installed ducting; there will be up to 9 cables (3 x 3 single core cables); there will be 3 trenches (1 per circuit); permanent corridor up to 45m; temporary construction corridor up to 60m. Offshore the MDS would comprise a maximum number of WTGs = 100 up to 389m in height.	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co14
Both	CC-02	All onshore and offshore project infrastructure	Operation and Maintenance	The vulnerability and climate resilience of the Project infrastructure during the operation and maintenance phase.	All onshore and offshore project infrastructure	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co51
Both	CC-04	All onshore and offshore project infrastructure	Operation and Maintenance	The impact of GHG emissions arising from the consumption of materials and activities required to facilitate the operation and maintenance phase	All onshore and offshore project infrastructure	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co50
Both	CC-05	All onshore and offshore project infrastructure	Operation and Maintenance	Net contribution to the Isle of Man's climate targets	The maximum MW hours produced by the operational windfarm	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co50
Both	CC-06	All onshore and offshore project infrastructure	Decommissioning	The impact of GHG emissions arising from decommissioning works (e.g. plant, fuel and vessel use) and the recovery (or disposal) of materials.	All onshore and offshore project infrastructure	The maximum adverse scenario is defined by the infrastructure that may affect or be affected by climate change i.e. all onshore and offshore project infrastructure	All marine mammal species and onshore habitats and species.	Tertiary Co6

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Further evidence to be provided via the Evidence Plan Process	Provision of evidence via technical note detailing how infrastructure is resilient to changes in the climate.
No LSE	Further evidence to be provided via the Evidence Plan Process	Provision of evidence via technical note detailing how GHG emission on land use will not result in LSE.
LSE	Assessed in ES	Use of published EPD's concerning Life Cycle Assessment research into embodied carbon associated with the construction of wind turbines and wind farm developments.
LSE	Assessed in ES	Details of Project infrastructure
LSE	Assessed in ES	Use of published EPD's concerning Life Cycle Assessment research into embodied carbon associated with the operation and maintenance of wind turbines and wind farm developments.
LSE	Assessed in ES	Future baseline environment will be based on Manx projections for grid average marginal carbon intensity of electricity generation.
LSE	Assessed in ES	Use of published EPD's concerning Life Cycle Assessment research into embodied carbon associated with decommissioning (recycling and recovery) of wind turbines and wind farm developments.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
Both	TBC	All onshore and offshore project infrastructure	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	All onshore and offshore project infrastructure	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	All onshore and offshore project infrastructure	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	As above	N/A
No LSE	Assessed in ES	N/A
LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	SE-01	All	Construction, operation and Decommissioning	Effects on employment within the Isle of Man.	Minimum job creation as a result of the Proposed Development.	The lowest level of job creation anticipated and therefore the lowest potential for beneficial effect.	Employment figures.	Tertiary Co18 Co32 Co23
TCPA	SE-02	All	Construction, operation and Decommissioning	Effects on GVA within the Isle of Man.	Minimum GVA as a result of the Proposed Development.	The lowest level of increase to GVA and therefore the lowest potential for beneficial effect.	GVA	Tertiary Co18 Co32 Co23
TCPA	SE-03	All	Construction, operation and Decommissioning	Effects on the demographics of the Isle of Man.	Maximum capacity of the Proposed Development and the highest number of migrant workers required.	The highest number of migrant workers required and therefore the greatest potential for demographic changes.	Demographics	Tertiary Co18 Co32 Co23
TCPA	SE-04	All	Construction and operation	Socioeconomic effects due to disruption to tourism and recreation receptors within the local onshore study area.	Maximum extent of terrestrial infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Tourism and recreational facilities/ receptors	Tertiary Co18 Co32 Co23
TCPA	SE-05	All	Construction and operation	Socioeconomic effects due to disruption to social community infrastructure receptors within the local onshore study area.	Maximum extent of terrestrial infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Social community infrastructure/ receptors	Tertiary Co18 Co32 Co23
TCPA	SE-06	All	Construction, operation and Decommissioning	Socioeconomic effects as a result of disruption to offshore recreational receptors.	Maximum extent of terrestrial infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Tourism and recreational facilities/ receptors	Tertiary Co18 Co32 Co23
TCPA	SE-07	All	Construction, operation and Decommissioning	Effects on the volume and value of tourism as a result of displacement of tourism visitors within the Isle of Man.	Maximum capacity of the Proposed Development and the highest number of migrant workers required.	The highest number of migrant workers required and therefore the greatest potential for demographic changes.	Tourism and recreational facilities/ receptors	Tertiary Co18 Co32 Co23
TCPA	SE-08	All	Construction, operation and Decommissioning	Increased demand for healthcare services.	Maximum capacity of the Proposed Development and the highest number of migrant workers required.	The highest number of migrant workers required and therefore the greatest potential for demographic changes.	Healthcare services	Tertiary Co18 Co32 Co23
TCPA	SE-09	All	Construction, operation and Decommissioning	Increased demand for emergency services (the Police, Fire and Emergency Medical Services).	Maximum capacity of the Proposed Development and the highest number of migrant workers required.	The highest number of migrant workers required and therefore the greatest potential for demographic changes.	Emergency services	Tertiary Co18 Co32 Co23
TCPA	SE-10	All	Construction, operation and Decommissioning	Effects on the volume and value of tourism within the Isle of Man.	See Impacts Register for SLVIA.	The highest potential for visual change and therefore the greatest potential for knock-on effects on tourists.	Tourism and recreational facilities/ receptors	Tertiary Co18 Co32 Co23
TCPA	SE-11	All	Construction, operation and Decommissioning	Effects on visitors access to sites and the shoreline due to construction, operation and decommissioning of the Proposed Development.	Maximum extent of terrestrial infrastructure.	Largest potential impact on access to sites and the shoreline.	Visitor numbers/ tourism receptors	Tertiary Co18 Co32 Co23
TCPA	SE-12	All	Construction, operation and Decommissioning	Effects on visitors safety and collision risks with offshore infrastructure.	Maximum extent of offshore infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Visitor numbers/ tourism receptors	Tertiary Co18 Co32 Co23
TCPA	SE-13	All	Construction, operation and Decommissioning	Effect on the enjoyment of offshore recreational activities (including effects on enjoyment of marine wildlife and scuba diving).	Maximum extent of offshore infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Tourists/ tourism receptors	Tertiary Co18 Co32 Co23
TCPA	SE-14	All	Construction, operation and Decommissioning	Effects on local beaches (energy effects).	Maximum extent of offshore infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Visitor numbers/ tourism receptors	Tertiary Co18 Co32 Co23

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Baseline Data Requirements
LSE	Assessed in ES.	Employment data
LSE	Assessed in ES.	GVA figures
No LSE	Further evidence to be provided via the Evidence Plan process.	Population data and trends
LSE	Assessed in ES.	Desk based search of onshore recreation and tourism receptors within the local onshore study area
LSE	Assessed in ES.	Desk based search of SCI receptors within the local onshore study area
LSE	Assessed in ES.	Desk based search of offshore recreation receptors within the LSA
LSE	Assessed in ES.	Accommodation (no. of rooms, type, beds, vacancy)
No LSE	Further evidence to be provided via the Evidence Plan process.	Desk based search of healthcare services within the local onshore study area
No LSE	Further evidence to be provided via the Evidence Plan process.	Desk based search of emergency services within the local onshore study area
LSE	Assessed in ES.	Economic impact of tourism reports, tourism sector employment, key visitor attractions, visitor surveys
No LSE	Further evidence to be provided via the Evidence Plan process.	Visitor sites and coastline baseline assessment.
No LSE	Further evidence to be provided via the Evidence Plan process.	Baseline data assessment of shipping and navigation.
LSE	Assessed in ES.	Desk based search of offshore recreation activities and organisations.
No LSE	Further evidence to be provided via the Evidence Plan process.	Literature review of impact of offshore wind on wave energy received by local beaches.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	SE-15	All	Construction, operation and Decommissioning	Creation of tourism and leisure activities (e.g. sight seeing).	Maximum extent of offshore infrastructure.	The largest extent of infrastructure and therefore the greatest potential for impact.	Visitor numbers/ tourism receptors	<u>Tertiary</u> Co18 Co32 Co23
TCPA	SE-16	All	Construction, operation and Decommissioning	Increased on demand for housing and school places due to influx of project workers.	Maximum capacity of the Proposed Development and the highest number of migrant workers required.	The highest number of migrant workers required and therefore the greatest potential for demographic changes.	Social community infrastructure/ receptors	<u>Tertiary</u> Co18 Co32 Co23
TCPA	SE-17	All	Operation	Increase in IoM GDP as a result of increased exports.	Minimum capacity of the Proposed Development.	The lowest level of increase to GVA and therefore the lowest potential for beneficial effect.	GDP	<u>Tertiary</u> Co18 Co32 Co23
TCPA	SE-18	All	Construction, operation and Decommissioning	Economic impact due to disruptions to shipping lanes.	See Impacts Register for Shipping and Navigation.	Highest potential for impacts on shipping and therefore greatest potential for knock-on effects on economy.	The local economy	<u>Tertiary</u> Co18 Co32 Co23
TCPA	TBC	All	Cumulative Effects	As above.	As above.	As above	As above.	As above.
TCPA	TBC	All	Transboundary Effects	As above.	As above.	As above	As above.	As above.
TCPA	TBC	All	Inter-related Effects	N/A	As above.	As above	As above.	As above.

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Baseline Data Requirements
LSE	Assessed in ES.	Economic impact of tourism reports, tourism sector employment, key visitor attractions, visitor surveys
No LSE	Further evidence to be provided via the Evidence Plan process.	Housing stock data and schools pupil capacity.
LSE	Assessed in ES.	Exports
LSE	Assessed in ES.	Cross reference to scoping info provided in shipping and chapter.
LSE	Assessed in ES.	As above.
No LSE	See Transboundary Screening Annex 5.A	N/A
LSE	Assessed in ES.	As above.

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
Both	MA&D-01	All onshore and offshore project infrastructure	Construction, operation and Decommissioning	Extreme weather conditions during the construction, operation and maintenance and decommissioning phase	All onshore and offshore project infrastructure. Onshore construction works to take place within a temporary construction corridor up to 60m in width. Construction works to include areas of open trenching, excavations, HDD and exposed areas.	All project infrastructure may be affected by this - no design scenario likely to be more susceptible to this impact	Sea users and onshore population in close proximity to construction, operation and maintenance area.	Tertiary Co24 Co36
Both	MA&D-02	All onshore and offshore project infrastructure	Construction	Buried cables during the construction, operation and maintenance and decommissioning phase. This to include the potential for ships snagging offshore cables during construction.	All onshore and offshore project infrastructure. Onshore construction works to take place within a temporary construction corridor up to 60m in width. Design options onshore which involve more open excavation likely to present greatest risk to this impact arising.	Design options onshore which involve more open excavation likely to present greatest risk to this impact arising.	Sea users and onshore population in close proximity to construction, operation and maintenance area.	Tertiary Co19 Co24 Co23
Both	MA&D-03	All onshore and offshore project infrastructure	Construction, operation and Decommissioning	Potential aircraft or shipping strike with offshore infrastructure	All design scenarios offshore likely to present similar level of risk - cross reference to be made with other relevant chapters in the ES - shipping & navigation and aviation.	details provided in Shipping & Navigation and Aviation.	Air users and sea users.	Tertiary Co36
Both	MA&D-04	All onshore and offshore project infrastructure	Construction, operation and Decommissioning	Ground collapse during construction	All onshore project infrastructure. Onshore construction works to take place within a temporary construction corridor up to 60m in width. Design options onshore which involve more open excavation likely to present greatest risk to this impact arising.	Design options onshore which involve more open excavation likely to present greatest risk to this impact arising.	Onshore population in close proximity to construction area.	Tertiary Co19 Co36
Both	MA&D-05	All onshore project infrastructure	Construction, operation and Decommissioning	Major road traffic accident, specifically, working over or adjacent to existing highways. Movement of construction vehicles along public roads and adjacent to public rights of way.	All onshore project infrastructure. Onshore construction works to take place within a temporary construction corridor up to 60m in width. Works including road crossing and sections along carriageway.	Works along carriageway and crossing likely to present greatest risk	User of highway network.	Tertiary Co23 Co36
Both	MA&D-06	All onshore project infrastructure	Construction, operation and Decommissioning	Manual Handling, Falls of persons from heights, Contact with live electrical conductors, Slips trips and falls. Injuries to plant, cable twisting and jamming.	All onshore and offshore project infrastructure	The maximum adverse scenario is defined by the infrastructure that may be affected by major accidents and disasters i.e. all onshore project infrastructure	Construction workers.	Tertiary Co19 Co24
Both	MA&D-07	All onshore project infrastructure	Construction, operation and Decommissioning	Increased likelihood of small earthquakes (magnitudes smaller than 1) through the steam removal and water return caused by drilling. This in turn can produce new instability along fault or fracture lines.	All onshore and offshore project infrastructure	The maximum adverse scenario is defined by the infrastructure that may be affected by major accidents and disasters i.e. all onshore project infrastructure	Sea users and onshore population in close proximity to construction, operation and maintenance area.	Tertiary Co36
Both	TBC	All onshore project infrastructure	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	All onshore project infrastructure	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	All onshore project infrastructure	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Assessed in ES.	Weather data
No LSE	Further evidence to be provided via the Evidence Plan process.	See Shipping and Navigation chapter
No LSE	Assessed in ES.	Refer to Shipping & Navigation and Aviation chapters.
No LSE	Further evidence to be provided via the Evidence Plan process.	See Ground Conditions Chapter
No LSE	Further evidence to be provided via the Evidence Plan process.	See traffic and transport chapter
No LSE	Further evidence to be provided via the Evidence Plan process.	Note to be provided on relevant health and safety requirements of the Proposed Development/
No LSE	Further evidence to be provided via the Evidence Plan process.	See Marine Geology and Processes
LSE	As above	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
Both	HH-01	Onshore	Construction	The generation of dust and particulates (e.g. from excavation or movement of dry materials) could have an adverse impact on human health.	See impacts register for Air Quality	Ensure all potential interactions are assessed	Human and ecological receptors.	Tertiary Co17 Co19 Co21
Both	HH-02	Onshore	Construction	Exhaust emissions from construction traffic have the potential to contribute to local ambient concentrations of nitrogen oxide (NO _x) and particulate matter (PM10 and PM2.5), resulting in potential effects on human health.	See impacts register for Air Quality	N/A	Human and ecological receptors.	Tertiary Co17 Co19 Co28
Both	HH-03	Onshore	Construction	Construction activities such as clearance of surface vegetation, could result in run-off materials into the local water sources.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables anticipated to be installed within and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance.	Watercourses	Tertiary Co17 Co19
Both	HH-04	Onshore	Construction	Ground disturbance or the removal of hardstanding could increase the potential for leaching and the mobilisation of soluble contaminants.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables anticipated to be installed within and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance.	Watercourses	Tertiary Co19
Both	HH-05	Onshore	Construction	Leaks and/or spills of contaminants, such as fuels and oils, used and stored during the construction phase could occur.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables anticipated to be installed within and assumes disturbance throughout the onshore ECC area therefore, the greatest area of land disturbance.	Watercourses	Tertiary Co19
Both	HH-06	Onshore	Construction	The impact of noise and vibration from construction activities due to the onshore landfall, cable route installation and substation construction could result in disturbance of local residence and commercial properties.	See impacts register for Noise and Vibration.	The exact location of the OnSS, cable and HDD drilling zones not yet defined. Positioning plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors.	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19
Both	HH-07	Onshore	Construction	The potential delays to existing routes and the potential severance of routes which could reduce the access to services (such as GPs and hospitals) and amenities (as recreational activities).	See impacts register for Traffic and Transport.	Ensure all potential interactions are assessed	Users of local road network requiring access to local services.	Tertiary Co28
Both	HH-08	Onshore	Construction	Potential for temporary loss of access to community spaces due to construction of the onshore infrastructure. This could impact community and tourism receptors due to severance of access routes.	See impacts register for Land Use and Ground Conditions.	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of Land Use and Ground Conditions impacts that could occur as a result of the Proposed Development within the ESIA Scoping Boundary.	Beaches.	Tertiary Co23

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	Further evidence to be provided via the Evidence Plan process.	See air quality chapter
LSE	Assessed in ES	See air quality chapter
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
LSE	Assessed in ES	See noise and vibration chapter
LSE	Assessed in ES	See Traffic and transport register
No LSE	Further evidence to be provided via the Evidence Plan process.	See Land Use and Ground Conditions Chapter

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
Both	HH-09	Onshore	Operation	Residential and commercial properties could be affected by the operational noise associated with the onshore substation (and associated infrastructure)	See impacts register for Noise and Vibration.	The exact location of the OnSS not yet defined. Positioning OnSS plant at the extents of the RLB would lead to worst-case predicted noise levels at the nearest Noise-sensitive Receptors	Human receptors and ecologically sensitive sites.	Tertiary Co17 Co19 Co24
Both	HH-11	Onshore	Decommissioning	Decommissioning activities such as clearance of surface vegetation, could result in run-off of materials into the local water sources.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Watercourses	Tertiary Co6
Both	HH-12	Onshore	Decommissioning	The generation of dust and particulates (e.g. from excavation or movement of dry materials) potentially having an adverse impact on human health.	See impacts register for Air Quality	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Human receptors and ecologically sensitive sites.	Tertiary Co6
Both	HH-13	Onshore	Decommissioning	Exhaust emissions from traffic associated with decommissioning could have the potential to contribute to local ambient concentrations of nitrogen dioxide (NO2), and particulate matter (PM10 and PM2.5), resulting in potential effects on human health	See impacts register for Air Quality	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Human receptors and ecologically sensitive sites.	Tertiary Co6
Both	HH-14	Onshore	Decommissioning	Decommissioning activities such as clearance of surface vegetation, could result in run-off of materials into the local water sources.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Watercourses	Tertiary Co6
Both	HH-15	Onshore	Decommissioning	The potential ground disturbance or the removal of hardstanding could increase the potential for leaching and the mobilisation of soluble contaminants.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Watercourses	Tertiary Co19
Both	HH-16	Onshore	Decommissioning	Leaks and/or spills of contaminants, such as fuels and oils, used and stored during the decommissioning phase could occur.	See impacts register for Hydrology, Hydrogeology and Flood Risk.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Watercourses	Tertiary Co6
Both	HH-17	Onshore	Decommissioning	The impact of noise and vibration from the decommissioning activities of onshore infrastructure could result in disturbance of local residence and commercial properties.	See impacts register for Noise and Vibration.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Human receptors	Tertiary Co6
Both	HH-18	Onshore	Decommissioning	Impacts due decommissioning of the onshore infrastructure on community and tourism receptors may occur due to severance of access routes, noise and vibration, and/or visual impact.	See impacts register for Socio-economics.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Human receptors	Tertiary Co6
Both	HH-19	Onshore	Decommissioning	The potential delays to existing routes and the potential severance of routes which could reduce the access to services (such as GPs and hospitals) and amenities (as recreational activities).	See impacts register for Socio-economics.	The MDS will include the maximum number of cables and infrastructure anticipated to be removed.	Users of local road network requiring access to local services.	Tertiary Co6
Both	TBC	All onshore project infrastructure	Cumulative Effects	As Above	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Baseline survey to be undertaken at the receptor locations located close to the OnSS.
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
No LSE	Further evidence to be provided via the Evidence Plan process.	See air quality chapter
No LSE	Further evidence to be provided via the Evidence Plan process.	See air quality chapter and traffic and transport chapter
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
No LSE	Further evidence to be provided via the Evidence Plan process.	See hydrology impacts register
No LSE	Further evidence to be provided via the Evidence Plan process.	See noise and vibration chapter
See Socio-economics	Further evidence to be provided via the Evidence Plan process.	See noise and vibration chapter
See Socio-economics	Further evidence to be provided via the Evidence Plan process.	See Socio-economics
LSE	As above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
Both	TBC	All onshore project infrastructure	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	All onshore project infrastructure	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A

Impact Background								
Consent	ID	Project Element	Original Project Phase	Project Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Receptor(s)	Commitments
TCPA	MW-01	Both	Construction, operation and maintenance	Consumption of materials for the construction, operational and maintenance phases of the proposed development	All project infrastructure	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of materials requirements that could occur as a result of the Proposed Development within the Scoping Boundary.	Material resource	Tertiary Co25 Co26 Co27
TCPA	MW-02	Both	Construction Waste	Waste generated during the construction of the Proposed Development	All project infrastructure	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of waste that could occur during construction.	Waste infrastructure	Tertiary Co25 Co26 Co27
TCPA	MW-03	Both	Decommissioning	Waste generated during decommissioning of the Proposed Development	All project infrastructure	In the absence of detailed design information, routes or locations, the MDS represents the maximum level of materials and waste that could occur as a result of the Proposed Development within the Scoping Boundary.	Waste infrastructure	Tertiary Co25 Co26 Co27
Both	TBC	Both	Cumulative Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	Both	Transboundary Effects	As Above	As Above	As Above	As Above	As Above
Both	TBC	Both	Inter-related Effects	N/A	As Above	As Above	As Above	As Above

EIA Scoping		
Likely Significance of Effect at Scoping Stage and Justification	Proposed Approach	Further Evidence
LSE	Assessed in ES	Quantification of materials, origin of materials and material type required for detailed assessment in the ES
No LSE	Further evidence to be provided via the Evidence Plan process.	Site Waste Management Plan to be produced and incorporated into Co17 and Co19
LSE	Assessed in ES	Quantification of waste produced during the decommissioning phase of the Proposed Development
LSE	As above	N/A
No LSE	see Transboundary Screening Annex 5.D	N/A
LSE	As Above	N/A



Moor Vannin Offshore Wind Farm

Annex 5.C - Scoping Strategy

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Ver. A

Revision Summary				
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02	06 October 2023	Julian Carolan	Julian Carolan	Julian Carolan

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1 Introduction

- 1.1.1.1 This document sets out the Mooir Vannin Offshore Wind Farm Ltd’s (formerly Orsted Isle of Man (UK) Ltd) (hereafter the Applicant) strategy for submitting a Scoping Report and formal request for a Scoping Opinion to the Department of Infrastructure (DoI) and Territorial Seas Committee (TSC), expected to be submitted in October 2023. It provides a background to the Mooir Vannin Offshore Wind Farm Project, the route to market options being progressed, existing legislation and sets out the strategy for preparing the Scoping Report.
- 1.1.1.2 This Strategy document (FINAL version) was submitted to Department of Infrastructure (DoI), Territorial Seas Committee (TSC) and Manx Utilities (as draft) for comment and has been updated based on the comments received (from DoI) to support the submission of the Scoping Report.

Table 1: Definitions of useful terms

Term	Definition
The Applicant	Mooir Vannin Offshore Wind Farm Limited
Offshore Array	The generation (turbines and array cables) and transmission (interlink cables and offshore substations) asset infrastructure contained within the Agreement for Lease (AFL) area.
Offshore Electrical Connection Search Area	The search area for the Electrical Cable(s) connecting the generation assets within the Offshore Array to Landfall on the Isle of Man, including the SCADA cables from the turbines. This area will comprise the marine components of the Proposed Development which are contained wholly within the Isle of Man Territorial Sea.
Offshore Electrical Connection Cable	The Electrical Cable(s) connecting the Offshore Array to landfall on the Isle of Man, including associated infrastructure and the SCADA cables from the turbines, to be located within the Offshore Electrical Connection Search Area.
Terrestrial Electrical Connection Search Area	The search area for the Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid.
Terrestrial Electrical Connection Cable	The Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Onshore Substation.
Route to Market (RtM) Transmission Asset Funnel	The area outside the Offshore Array within which the Route to Market Transmission Assets may exit the AFL area (e.g. Electrical Cables to National Grid in the UK) and terminate in other jurisdictions (e.g. Wales, England or Ireland)
Route to Market (RtM) Transmission Assets	The transmission assets associated with the Route to Market options situated within the Offshore Array and the Route to Market Transmission Asset Funnel, that form part of the Proposed Development.
The Proposed Development	The parts of the Mooir Vannin Offshore Wind Farm that will be defined within the Scoping Report and for which a Scoping Opinion is being sought from the Isle of Man government (specifically, the Department of Infrastructure (DoI) and Territorial Seas Committee (TSC)).

Term	Definition
	These are: the Offshore Array, the Offshore Electrical Connection Cable, the RtM Transmission Assets within the Offshore Array, the Terrestrial Electrical Connection Cable and onshore substation.
Moor Vannin Offshore Wind Farm	Refers to "The Whole Project". All aspects of the Proposed Development, the onshore Operations and Maintenance facilities and any associated RtM assets that are located outside the Isle of Man's jurisdiction.

2 Legislation

- 2.1.1.1 The following section relates to the consents and legislation for the Isle of Man. The additional consents required for the Project including a radial connection to the UK, are set out in [Section 3](#).
- 2.1.1.2 The Applicant submitted a Position Paper entitled “[Orsted Isle of Man Offshore Wind Farm Project Current Offshore Wind Consenting Regime](#)” to the Department of Infrastructure (DoI) on 12 June 2023. The key points of the paper are summarised in the following sections.
- 2.1.1.3 The consenting regime in the Isle of Man is in a state of flux given the ongoing transition to the new regime established by the Marine Infrastructure Management Act 2016 (MIMA 2016).
- 2.1.1.4 The IoM Government has prepared a helpful “Guide for Developers” for proposed works in Isle of Man Territorial Sea. The Guide for Developers repeats a statement made by the Minister for Infrastructure in Tynwald that confirms that new development in the territorial seas will continue to be assessed in accordance with the existing consenting regime, pending introduction of new primary legislation:
- “pending the introduction of the new primary legislation, the Department will continue to assess all applications for development within the territorial seas through the existing consenting regimes in partnership with stakeholders via the Territorial Seas Committee and the Environment and Infrastructure Committee and in accordance with the views of the Council of Ministers. The Department will produce a Guide to the existing regimes for both developers and other stakeholders”.*
- 2.1.1.5 The main consents required for the offshore elements (seaward of MHW) of an offshore windfarm under the existing consenting regime are:
- Electricity Act 1996 consent;
 - Harbours Act 2010 consent;
 - Submarine Cables Act 2003 authorisation and associated 2004 Regulations; and
 - A Water Pollution Act 1993 licence.
- 2.1.1.6 The onshore elements of an offshore windfarm (landward of MLW) must be consented via the Town and Country Planning Act 1999 (TCPA 1999) and this is not expected to change as a result of MIMA 2016.
- 2.1.1.7 Submarine Cables Act 2003: Section 1 prohibits any works for the laying of a cable in, under or over territorial waters except in accordance with an authorisation given by the DoI. It is supported by subordinate legislation including a requirement for the application to be accompanied by an EIA.
- 2.1.1.8 With regard to progressing the EIA, it is considered by the Applicant that the Submarine Cables (Application for Authorisation) Regulations 2004 can be interpreted to provide the legislative “hook” for scoping, in the absence of any subordinate legislation under MIMA 2016¹.

¹ The Submarine Cables (Application for Authorisation) Regulations 2004. See reg.2(3)(d), reg.3 and Schedule 1. Reg.3(2) provides that the content of the EIA shall reflect the requirements of European Council Directive 85/337/EEC, as amended by Directive 97/11/EC, which provides that a competent authority may provide a scoping opinion for the environmental impact assessment of a particular project.

- 2.1.1.9 Whilst that interpretation remains valid, it is noted that in any case the Isle of Man Strategic Plan 2016 is clear in its support for EIA for energy developments, specifically:
- 2.1.1.9.1 Energy Policy 4: "Development involving alternative sources of energy supply, including wind, water and tide power, and the use of solar panels, will be judged against the environmental objectives and policies set out in this Plan. Installations involving wind, water and tide power will require the submission of an EIA"
 - 2.1.1.9.2 Environment Policy 24: "Development which is likely to have a significant effect on the environment will be required: i) to be accompanied by an Environmental Impact Assessment in certain cases; and ii) to be accompanied by suitable supporting environmental information in all other cases."
 - 2.1.1.9.3 Paragraph 7.18.3 of the Strategy Plan states that current practice on EIAs from England and Wales will be followed, until an EIA Planning Policy Statement is issued in the Isle of Man (no such statement is currently available). Carrying out a Scoping process represents current practice in England and Wales.
 - 2.1.1.9.4 Therefore, it is considered appropriate and competent for the Applicant to submit the Scoping Report pursuant to these policies, as a precursor to applications to be submitted pursuant to MIMA 2016 and TCPA 1999. If a current legislative hook is deemed to be required, the Submarine Cables Act 2003 provide such a mechanism for the offshore elements (as explained above) plus sections 2 and 10(4) of the TCPA 1999 provide such a mechanism for the onshore elements, as they provide a statutory basis for the Isle of Man Strategic Plan and its policies in decision making for the onshore planning regime.
- 2.1.1.10 The MIMA 2016 was enacted on 17 May 2016 however its provisions are not yet in operation². Once in operation, MIMA 2016 will remove the requirement for the consents for the offshore elements of the Project listed above, where MIMA 2016 applies.
- 2.1.1.11 There are transitional provisions, and whilst the detail is to be published in regulations, there is a clear stated aim in S61(2) of the Act for the transitional regulations to "aim to ensure continuity of process so far as possible". The regulations are therefore permitted to provide that anything done under another consenting regime or any other preparatory action already carried out is to have effect as if done under the Act. These Regulations are currently under development and have not yet been published or enacted.
- 2.1.1.12 The Applicant submitted notice of its proposal to submit a Scoping Report to the Department of Infrastructure (DoI) on 18th October 2023, thereby fulfilling the requirements of the timetable identified in Section 10 of the MIMA 2016 and the requirements of Section 15 (specifically Section 15(2)) of that Act (noting that these provisions are not yet in force, although it is expected and anticipated that transitional provisions will ensure that these preparatory actions already carried out to have effect as if done under MIMA 2016). The Scoping Report also covers the onshore elements of the Project, recognising the policies in the Isle of Man Strategic Plan 2016 as noted above.

² S2 provides that the Act is to come into operation on a date to be appointed by the DOI.

3 Whole Project Description and Whole Project EIA

- 3.1.1.1 The Applicant will adopt a “Whole Project” approach to the EIA with the Scoping Report presenting the approach, which is demonstrated graphically in **Figure 1**. The Whole Project description for EIA (and thereby the Scoping Report) will describe all aspects of the Moir Vannin Offshore Windfarm relative to the various consents that are being sought in all jurisdictions (Town and Country Planning Act (TCPA) and Marine Infrastructure Consent (MIC) on the Isle of Man and Planning Act consent in the UK). **Figure 1** presents the “Whole Project” and how the constituent parts of the Moir Vannin Offshore Wind Farm Project relate to the relevant consents being sought.
- 3.1.1.2 The “Whole Project Description” results in a nested project description, specific to the consent being sought. This means that the Moir Vannin Offshore Wind Farm in its entirety will be described to a high-level in the Project Description Chapter of the Scoping Report with the required detail (lower panels of **Figure 1**) being provided to inform the impact assessments of each respective consent. For example, the Scoping Report submitted under the Submarine Cables (Application for Authorisation) Regulations 2004 or MIMA 2016 will need to define in detail those parts of the Proposed Development that could give rise to material effects both alone and in-combination upon the Isle of Man and its territorial waters. Therefore, the Proposed Development for which consent(s) are being applied for in the Isle of Man will be defined in detail.
- 3.1.1.3 Those aspects that fall under jurisdictions outside of the Isle of Man and consents (e.g. Planning Act 2008 - labelled PA in **Figure 1** and will be subject to a separate EIA process) need only to describe, at a high-level, those constituent parts that allow the reader (regulator or stakeholder) to understand the Moir Vannin Offshore Wind Farm in its entirety and to inform the cumulative assessment that will be included in each receptor chapter of the resultant ES.

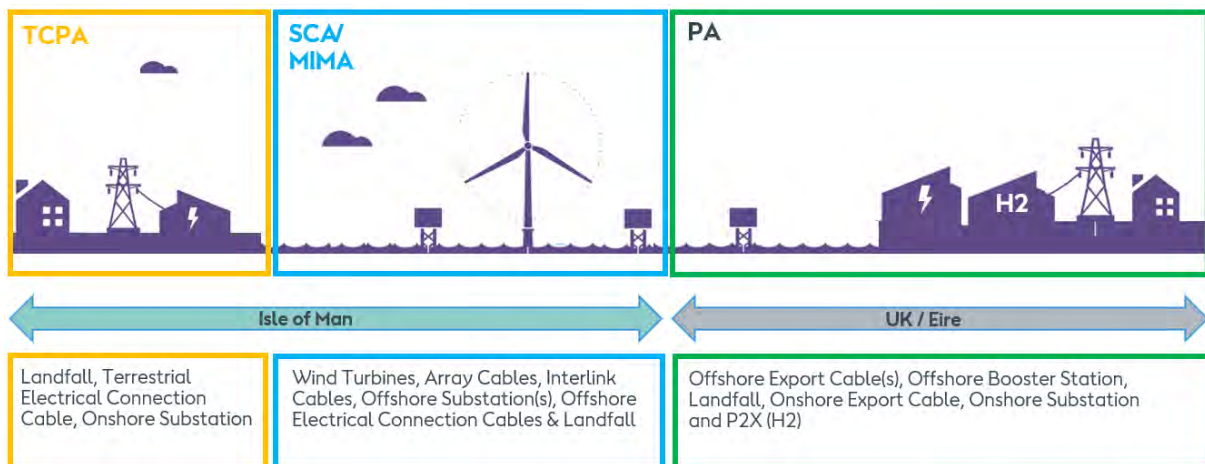


Figure 1: Whole Project Description and associated consents. (Note: PA is Planning Act 2008 (E&W) and TCPA is Town and Country Planning Act 1999 (IoM))

- 3.1.1.4 Multiple Route to Market (RtM) options are actively being investigated by the Applicant. These include:
- Radial connection to the GB National Grid
 - Multi-Purpose Interconnector (MPI) linking the UK and Ireland
- 3.1.1.5 Several locations in the UK and Ireland are actively being explored through the RtM maturation and Route Planning and Site Selection (RPSS) process to support the early

EIA. These option locations are shown in **Figure 2** in relation to the Isle of Man and the UK.

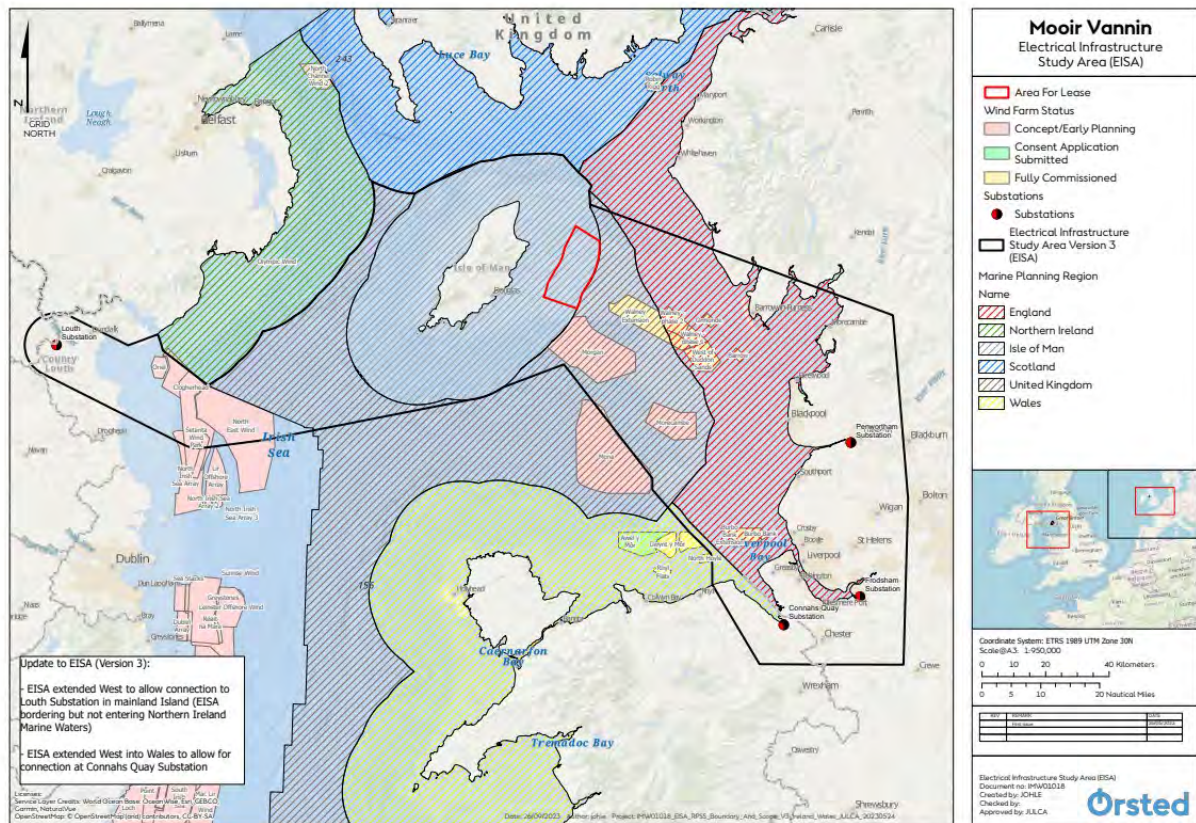


Figure 2: RtM options being investigated and resulting Electrical Infrastructure Study Area (EISA) for the entire project (black outline).

3.1.1.6 Those parts of the transmission assets which exit the AfL area (e.g. Electrical Cables to National Grid in the UK) and terminate in other jurisdictions (e.g. Wales, England or Ireland) and are likely to give rise to Likely Significant Effect (“LSE”) within the jurisdiction of the Isle of Man, either alone or in-combination (see Electrical Export Cable Funnel in **Figure 3**) will also be detailed to a sufficient level in the Scoping Report to enable meaningful consultation with stakeholders on the Report, and to enable to Isle of Man government to issue a robust Scoping Opinion in relation to these cumulative and transboundary effects. For those assets that terminate in other jurisdictions and are subject to separate consents, the Applicant will engage with Isle of Man stakeholders as part of the preparation of these consent documents to understand any transboundary issues.

4 Project and location

4.1.1.1 The location of the Moir Vannin Offshore Windfarm Agreement for Lease (AfL) area, the search area for the Offshore Electrical Connection (80-100MW) and the RtM Electrical Export Cable Area to the UK is shown in **Figure 3**.

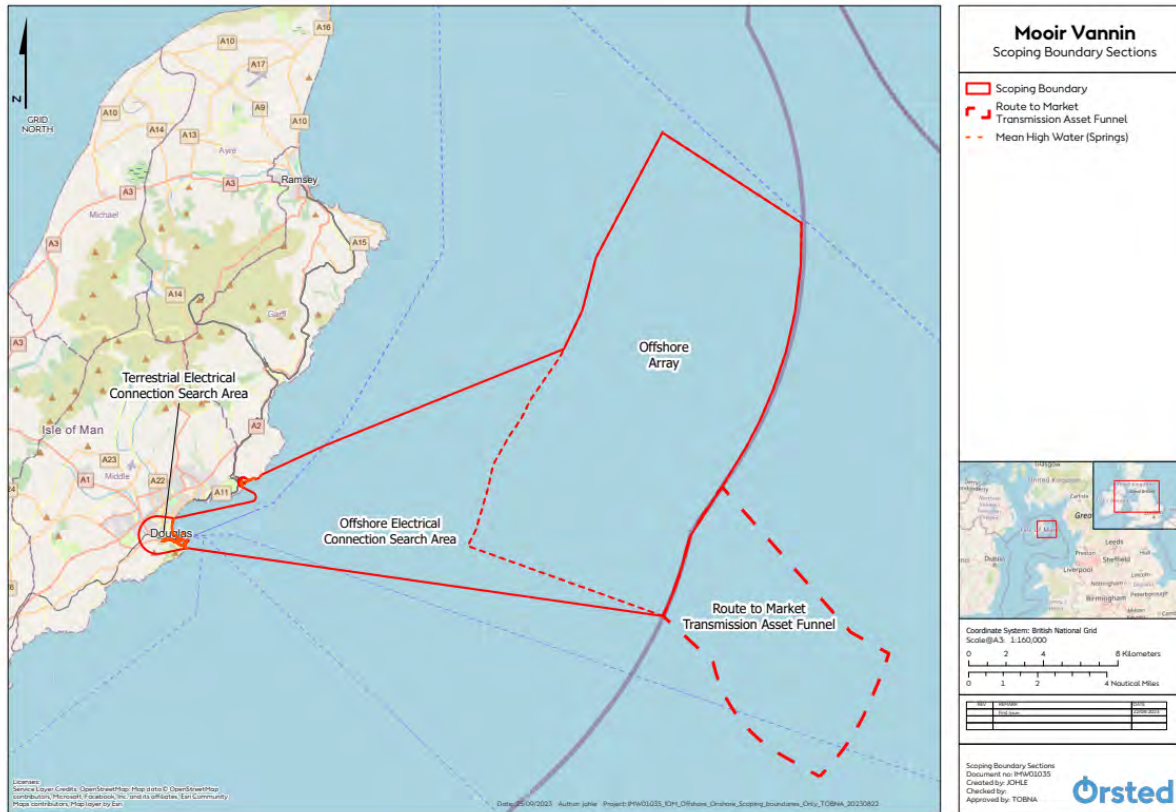


Figure 3: location of the Moir Vannin Offshore Wind Farm AfL area, the Moir Vannin Offshore Electrical Connection Search Area and the RtM Electrical Export Cable Area.

5 Onshore Consent(s)

5.1.1.1 The Applicant is actively investigating the possibility of bringing renewable electricity from the offshore array to the electrical grid on the Isle of Man. While the exact design and mechanism for this may take some time to develop and mature, the Scoping Report will present, and hence a Scoping Opinion shall be sought for, the following:

- Potential cable landfall locations at Douglas and Groudle Beach (see [Figure 4](#))
- Terrestrial Electrical Connection Cable Route to Middle River from landfall at Douglas (see [Figure 3](#) for overview and [Figure 4](#) for details near landfall)

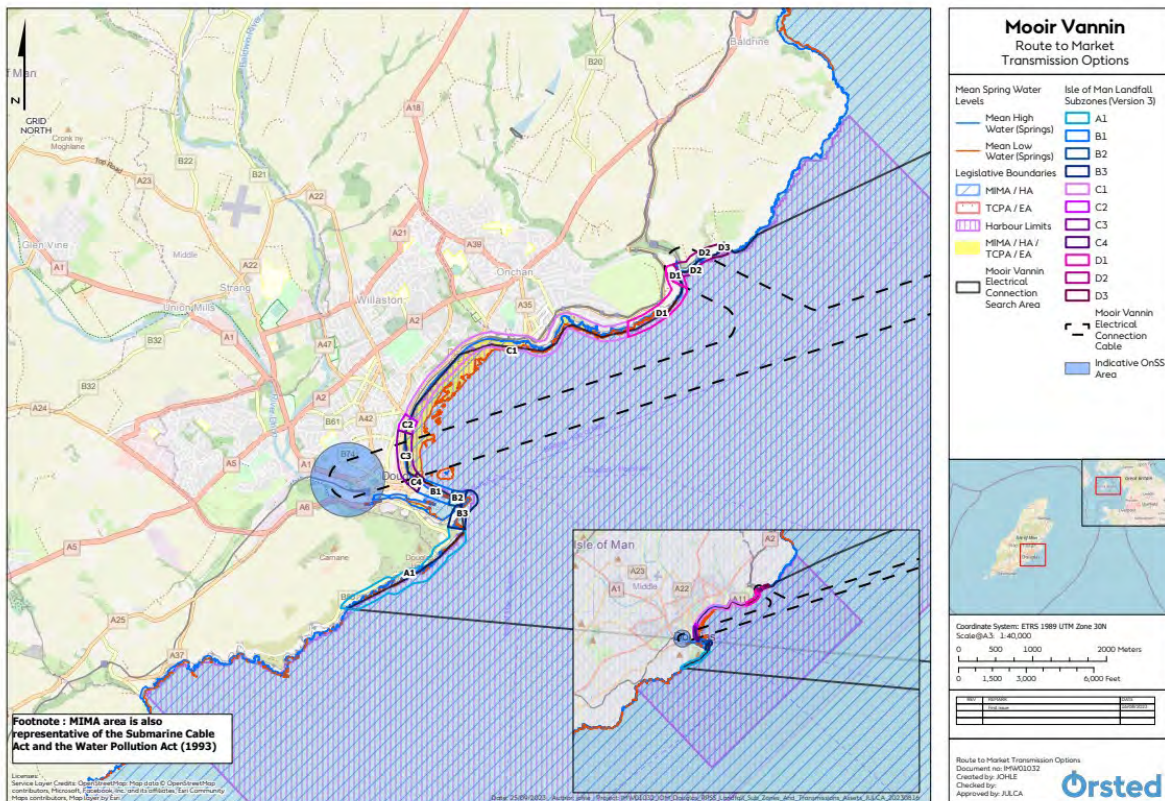


Figure 4: Potential export cable corridor for the electrical connection

5.1.1.2 The exact landfall location (either Douglas Bay or Groudle Beach) is yet to be determined and will be concluded in consultation with Manx Utilities, Dol, and DEFA Planning and Building Control. Potential grid connection locations at Middle River substation located at the existing Pulrose Power Plant and Lord Street are captured indicatively on [Figure 4](#) as the blue circle.

5.1.1.3 If a decision is made (subject to discussions and agreement with Manx Utilities) to make landfall at Groudle Beach (to the north) a terrestrial export cable corridor to Douglas would be required to connect the landfall option with the grid connection at Middle River substation (Pulrose Power Plant) or Lord Street. If required, this development scenario would be subject to a separate TCPA Application is therefore not part of Proposed Development being "Scoped".

5.1.1.4 The marine electrical cable(s) to Groudle Beach (located within the solid black line on [Figure 4](#)) are being scoped as part of the Proposed Development.

- 5.1.1.5 The spatial extent of the jurisdiction of MIMA 2016 is shown in **Figure 4** as the blue solid line (representing Mean High-Water Spring). As the Terrestrial Electrical Connection Cable Route would occur within a terrestrial setting (between the limit of MIMA 2016 and the red solid line on **Figure 4**) a TCPA 1999 permission will be required for any terrestrial components above MLW (as discussed above).
- 5.1.1.6 The exact route to consent the Offshore Electrical Connection Cable, which connects the Offshore Array with the electrical grid network on the Isle of Man via the Terrestrial Electrical Connection Cable Route, has yet to be determined. It is expected to be either:
- Consented by Manx Utilities under the Submarine Cables Act 2003 or MIMA 2016; or
 - Consented by the Applicant under MIMA 2016.
- 5.1.1.7 Irrespective of the route to consent which is chosen, a formal request for a Scoping Opinion under the SCA remains valid if either consenting route is later adopted.
- 5.1.1.8 The conclusion on consenting route will be confirmed to Dol at the earliest convenient opportunity. Once confirmation has been received from the Dol/TSC, the Scoping Strategy will be updated accordingly and the proposed approach will be communicated to all interested parties and stakeholders.

6 Previous Scoping Report

- 6.1.1.1 The Isle of Man Offshore Windfarm Project previously prepared a Draft Scoping Report, which was submitted to the Isle of Man Government in February 2016. A Scoping Opinion was issued June 2016 by the Department of Infrastructure (DoI) for and on behalf of itself, the Department of Food, Environment and Agriculture (DEFA), the Department for Economic Development (DED) and Manx National Heritage (MNH).
- 6.1.1.2 For the avoidance of any doubt, both documents are considered not to be applicable or relevant to this Scoping Report. This is in acknowledgement of the time that has elapsed since the original submission and change in project strategy.

7 Scoping Strategy

- The Scoping Report will adopt a proportionate approach to Environmental Impact Assessment (EIA).
- The Scoping Report will identify all potential impacts and provide an initial assessment of Likely Significant Effects (LSE).
- The report will largely be process focussed presenting the process by which additional information will be brought forward to support No LSE (via the Evidence Plan Process) and how LSE will be assessed to support the application for consent (in an Environmental Statement).
- The process will not explicitly scope out any impacts within the report but will identify those LSE for assessment, supported by further evidence following the submission of the scoping report if considered necessary as a result of the scoping response or subsequent consultation (e.g. via the evidence plan process). The Scoping Report will be a Roadmap for the project EIA. Setting out the structure for the ES, and what actions will be taken to refine the EIA following receipt of the Scoping Opinion.
- The Scoping Report will adopt a format which is "Uniquely Manx", by adopting tailor made approaches to the Isle of Man stakeholders that combine best practice and innovation.



- 7.1.1.1 The Scoping Report will set out the Likely Significant Effects ("LSE") anticipated to arise from all phases of the construction, operation and decommissioning of:
- The generation assets (wind turbines) within the AfL area;
 - The transmission assets (substations, interconnectors and export cables) within the AfL area;
 - The transmission assets (Electrical Cable) to landfall on the Isle of Man;
 - The transmission assets (Electrical Cable(s)) from landfall in Douglas to Grid Connection in Douglas (Awaiting DoI written confirmation on extent of MIMA); and
 - The RtM transmission assets to the UK which will be located within 12km of the Isle of Man territorial waters (the length of a tidal excursion which is the upper limit of sediment transport and deposition and limit of LSE to arise).
- 7.1.1.2 The above is presented in **Figure 3** with detail of the onshore transmission asset from landfall in Douglas to Grid Connection set out in detail in **Figure 4**.

7.1.1.3 The Scoping Report will not assess the potential for Likely Significant Effects (“LSE”) associated with:

- Any Grid Connection upgrade works associated with the Electrical Connection (assumed to be the responsibility of Manx Utilities).
- Any ECC from Groudle Beach to Grid Connection at Douglas (subject to separate TCPA)

7.1.2 Identification of LSE

7.1.2.1 The Scoping Report will provide an initial assessment of the potential for LSE. The initial assessment of all project impacts will be presented in an Impacts Register. Impacts will be broadly categorised into one of two categories (LSE or No LSE) as presented in [Figure 5](#).

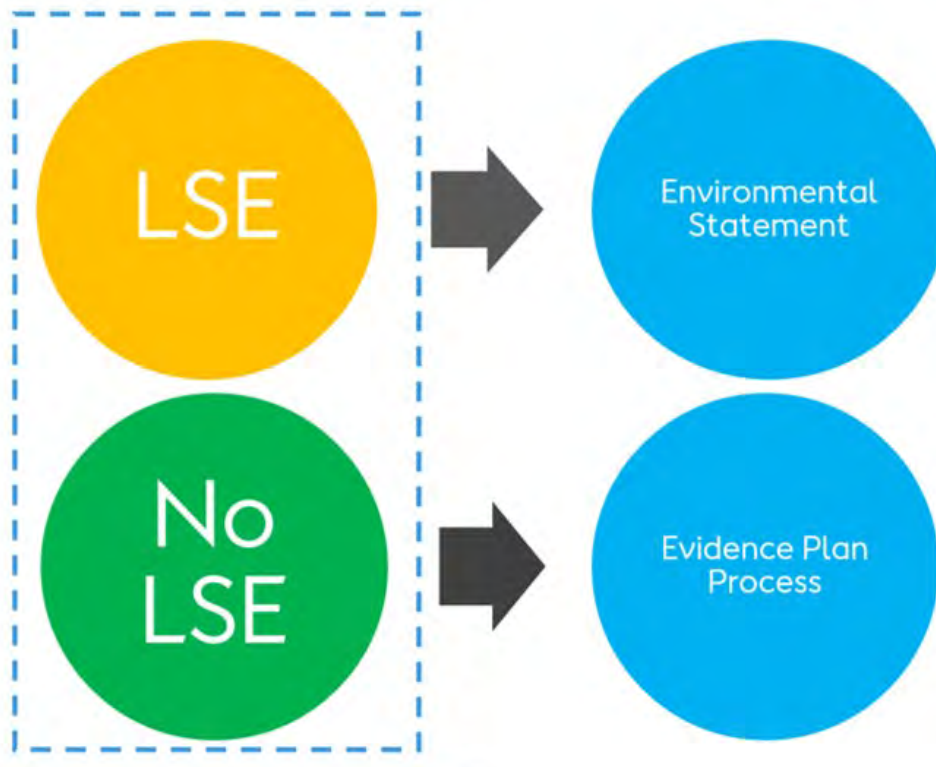


Figure 5: Categorisation of LSE into two categories within the Scoping Report and the resultant path to Evidence Plan and Environmental Statement.

7.1.3 Evidence Plan Process

7.1.3.1 Leading up to the submission of the Scoping Report (via the first Evidence Plan Technical Panel Meetings) and through to the issue of the formal Scoping Opinion, the Applicant will provide the relevant stakeholders with the additional evidence (Position Papers and/or Technical Notes) to support the conclusions of No LSE on receptors that are set out in the Impacts Register.

7.1.3.2 Where LSE are concluded on receptors, those impacts will be carried through for detailed assessment and description within the Environmental Statement at the point of Application.

7.1.3.3 Irrespective of the conclusion of LSE or No LSE, stakeholders will have had the opportunity to review, feedback, and agree to the conclusions and the

route/methodology of assessment through the Evidence Plan Process, the key stages of which are outlined in [Figure 6](#).

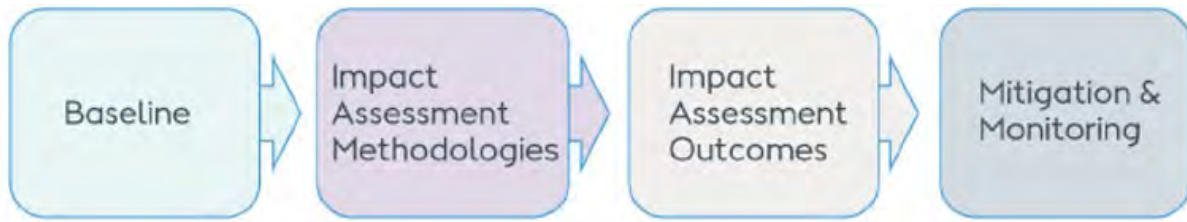


Figure 6: Overview of the four key stages of the Evidence Plan Process.

7.1.4 How will the Scoping Report be presented?

7.1.4.1 The report will include the following chapters and will provide a high-level introduction to each of these topics, with supporting information provided in the outlined annexes:

Introductory Chapters	Offshore Chapters	Onshore Chapters	Concluding Chapters	Supporting Annexes
<ul style="list-style-type: none"> •Introduction •Legislation and policy •EIA Methodology •Project Description •Consultation 	<ul style="list-style-type: none"> •Marine Geology, Oceanography and Physical Processes •Marine Water and Sediment Quality •Offshore & Intertidal Ornithology •Benthic Subtidal and Intertidal Ecology •Fish and Shellfish Ecology •Commercial Fisheries •Marine Mammals & Megafauna •Shipping and Navigation •Seascape, Landscape and Visual Impact Assessment •Offshore Archaeology and Cultural Heritage •Military and Civil Aviation •Other Marine Users and Activities 	<ul style="list-style-type: none"> •Ecology •Geology and Ground Conditions •Land Use •Resources and Waste Management •Traffic and Transport •Archaeology and Heritage •Noise and Vibration •Air Quality •Hydrology and Flood Risk 	<ul style="list-style-type: none"> •Climate Change •Human Health •Major Accidents & Disasters •Protected Sites Assessment •Transboundary Assessment •Cumulative Effects Assessment •Summary and conclusion 	<ul style="list-style-type: none"> •Proportionate EIA Position Paper •Impacts Register •Commitments Register •Evidence Plan Process •Community Engagement, Consultation & Action Strategy •Land Use Impact Magnitude & Receptor Sensitivity •Transboundary PSA Strategy and Screening

7.1.4.2 The Scoping Report will utilise specific questions to ensure that key parts of the process are understood and clear to those involved at the various stages of the EIA to support consent application under MIMA 2016.

7.1.4.3 Typical questions to be presented at Scoping are likely to be:

- Is the Project Description of sufficient detail to allow all impacts at all stages of the project to be identified?
- Are all the impacts that you would associate with an offshore windfarm identified and an assessment of LSE provided in the Impacts Register?

- Is the reasoning for the Commitments Register and its function in delivering Proportionate EIA clear?
- Is the path from LSE and No LSE to the content of the Environmental Statement clear?

Annex 5.D: Transboundary Screening



Moor Vannin Offshore Wind Farm

Annex 5.D - Transboundary Screening

Prepared GoBe Consultants, 04 October 2023
Checked Tobias Naylor & Hannah Towner-Roethe, Orsted, October 2023
Accepted Francesca De Vita & John Galloway, Orsted, October 2023
Approved Julian Carolan, Orsted, October 2023

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1 Transboundary Screening

1.1 Introduction

- 1.1.1.1 This Annex of the Scoping Report identifies the topics of relevance to the Proposed Development, and considers the potential effects from construction, operation and maintenance, and decommissioning of the offshore and onshore components of the Proposed Development on transboundary receptors. It provides a screening of transboundary effects broken down into the topics as set out within the Scoping Report.
- 1.1.1.2 For a detailed description of the characteristics of the Proposed Development, please refer to Chapter 3, Project Description. A brief outline of the offshore and onshore components of the Proposed Development is provided below.
- **Offshore:** The offshore components of the Proposed Development consist of the Offshore Array and the Offshore Electrical Connection Study Area. Offshore infrastructure will consist of up to 100 wind turbine generators (WTGs), up to five offshore substations, array cables, interlink cables, subsea export cables (including SCADA cables) and associated scour and cable protection, and any Route to Market (RtM) Transmission Assets that are within the Offshore Array.
 - **Onshore:** The onshore components of the Proposed Development consist of the Terrestrial Electrical Connection Search Area where which electrical cables will be taken from the landfall to the Isle of Man point of connection to the Manx grid. Onshore infrastructure will consist of Terrestrial Electrical Connection Cable(s) with associated infrastructure and an onshore substation.
- 1.1.1.3 The Proposed Development is located wholly within the Isle of Man and its Territorial Seas, with the Offshore Array approximately 6 nm due east of the Isle of Man with Maughold Head as its closest point at approximately 11 km. The Offshore Electrical Connection Cable(s) will travel from the Offshore Array towards Douglas Bay and will make landfall at either Groudle Bay or within Douglas. The Terrestrial Electrical Connection Cable(s) will then travel from landfall in Douglas towards the Onshore Substation, which is also located within Douglas (Note that the cable(s) between landfall and the onshore substation associated with the option of making landfall at Groudle Bay are not included as part of the Proposed Development for which a Scoping Opinion is being sought).

1.2 Legislation, policy and guidance

1.2.1 International agreements

- 1.2.1.1 The Isle of Man is a signatory to the Convention on Environmental Impact Assessment in a Transboundary Context, commonly referred to as the 'Espoo Convention', which sets out obligations to assess the environmental impacts of certain activities at an early stage of the planning process. It also provides the general obligation of signatories to notify and consult each other on all major projects under consideration that are likely to have significant transboundary environmental impacts.

1.2.2 International guidance

- 1.2.2.1 Paragraph 7.18.3 of the Isle of Man Strategic Plan 2016 (Isle of Man Government, 2016) stated that a Planning Policy Statement would be published that would set out specific guidance on how the Department of Infrastructure would address applications subject to Environmental Impact Assessment (EIA). The Strategic Plan set out that until

such point as this Statement was published, current practice from England and Wales would be followed.

- 1.2.2.2 Given that the Planning Policy Statement is yet to be published, it is assumed that the Department of Infrastructure is still using policy and guidance derived from England and Wales as a guide when considering the need for EIAs for projects in the Isle of Man and in its Territorial Seas. Therefore, where relevant, this Scoping Report refers to current English and Welsh guidance.
- 1.2.2.3 The Planning Inspectorate (PINS) Advice Note 12: Transboundary effects (version 6 PINS, December 2020) (PINS, 2020) sets out the procedures for consultation in association with an application for a Development Consent Order (DCO) in England or Wales, where such development may have the potential to give rise to significant transboundary effects. Under the guidance of this note, developers have no formal role under the Regulation 32¹ process, as the duties prescribed by Regulation 32 in notifying and consulting with other European Economic Area (EEA) States on potential transboundary effects are the responsibility of the Secretary of State (herein assumed to be representatives from the Isle of Man government). However, developers are advised:
- That PINS may notify the relevant EEA State of their particular project;
 - To provide information to the Inspectorate to enable a view to be reached as to whether the development is likely to have significant transboundary effects on EEA States; and
 - That information about the potential for transboundary effects should be provided by the Applicant as part of a scoping request and as part of the suite of documents accompanying the application for development consent.
- 1.2.2.4 This transboundary screening Annex has been produced, applying the general approach advised in PINS Advice Note 12 in an Isle of Man context, by defining 'transboundary' as any other international jurisdiction rather than identifying EEA states. This is in recognition of the fact that:
- The Isle of Man is not, and never has been, part of the EEA or the European Union (EU); and
 - The United Kingdom (UK), the closest international jurisdiction to the Isle of Man, left the EEA in December 2020 following its withdrawal from the EU.
- 1.2.2.5 This transboundary screening sets out information relating to the potential effects of the Proposed Development on environmental receptors within the international jurisdictions in its vicinity, in order to assist the Department of Infrastructure (DoI) in identifying the governments of those relevant jurisdictions for the purposes of transboundary consultation. It is the Applicant's understanding that transboundary consultation will be initiated by DoI as part of forming its Scoping Opinion, and that the Applicant will liaise with effected transboundary parties as necessary.

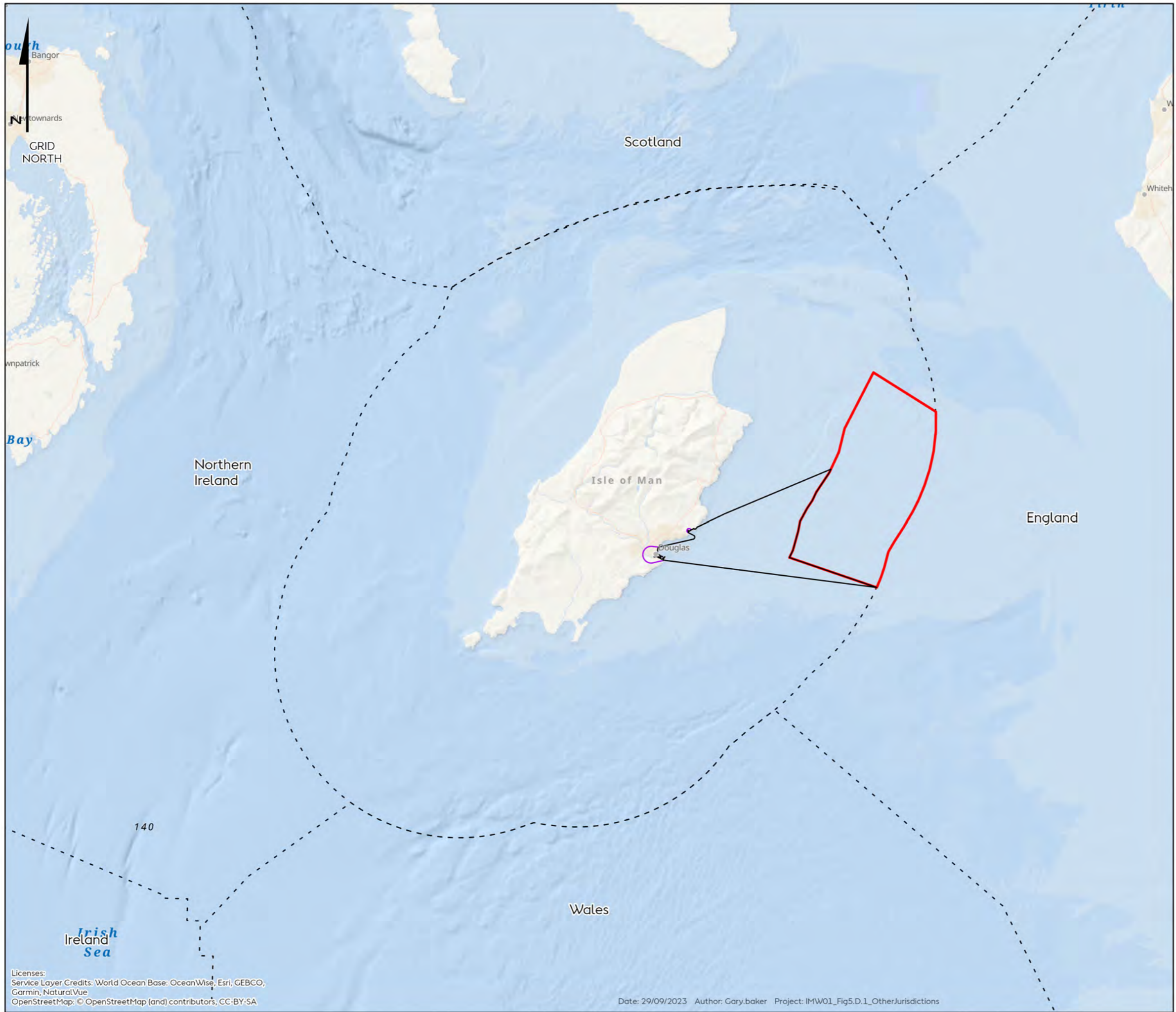
1.3 Study Area

- 1.3.1.1 The Proposed Development is located wholly within the Isle of Man Territorial Seas. The distance of the Proposed Development from the boundary of bordering jurisdictions (England, Wales, Scotland, Ireland and Northern Ireland) and jurisdictions within a wider context is presented in Table 1.1 and within Figure 1.1 (bordering jurisdictions) and Figure 1.2 (wider context).

¹ Of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations')

Table 1.1: Summary of approximate distance to nearest jurisdictions.

Jurisdictional Boundary	Distance to Scoping Boundary (km)
<i>Bordering jurisdictions</i>	
England	0
Wales	16.51
Scotland	17.53
Northern Ireland	37.29
<i>Jurisdictions within a wider context</i>	
Ireland	69.04
Netherlands	446.36
France	462.21
Norway	502.09
Belgium	508.84
Germany	510.39
Denmark	514.24
Faroe Islands	678.74
Iceland	924.83



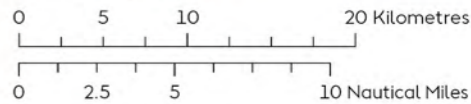
Moor Vannin

Figure 5.D.1
Proximity of Other Jurisdictions to the Scoping Boundary

- - - Jurisdictional Boundaries
- Scoping Boundary**
- Offshore Electrical Connection Search Area
- Terrestrial Electrical Connection Search Area
- Offshore Array



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:450,000

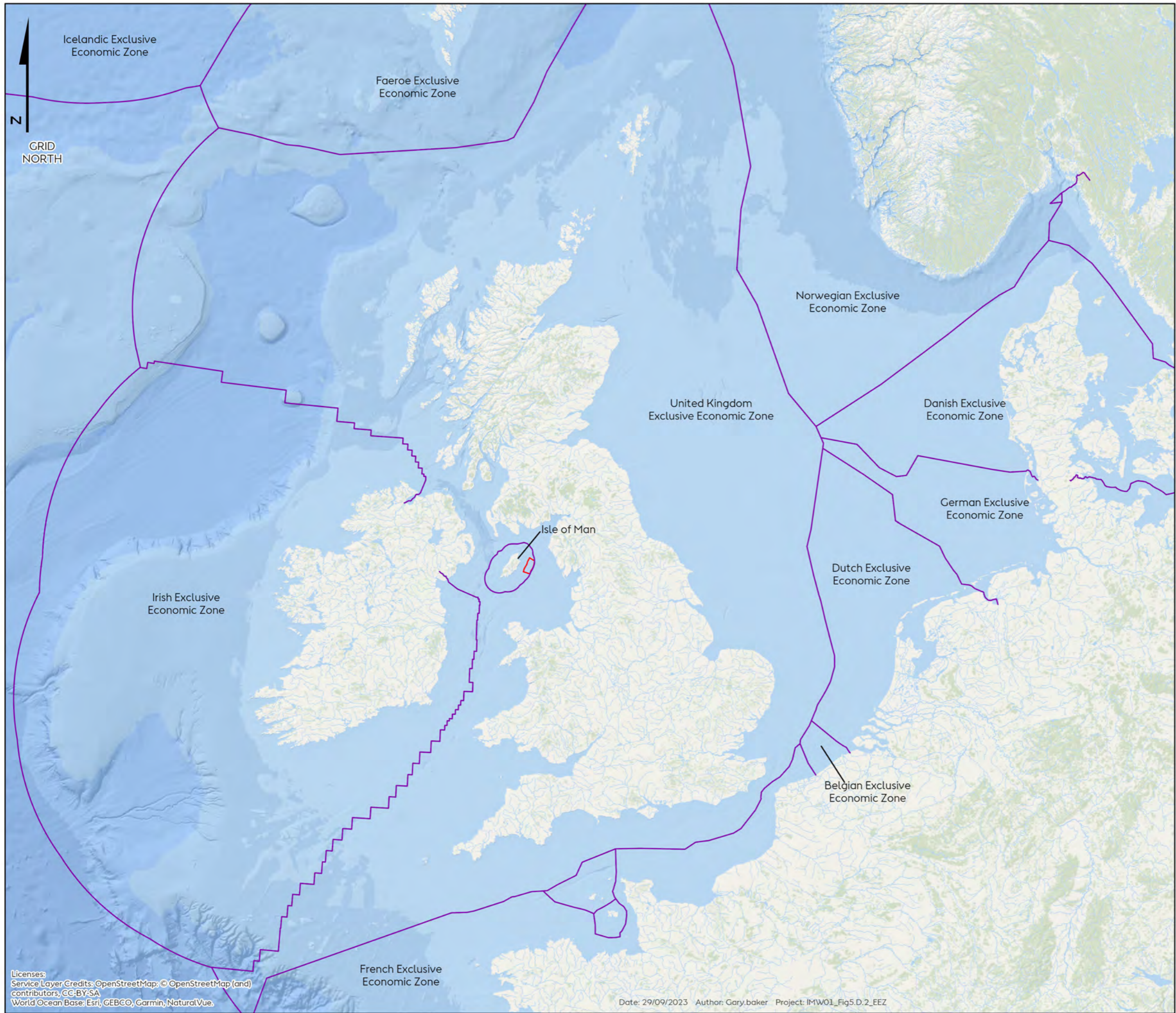


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	First issue	29/09/2023

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Garmin, NaturalVue
OpenStreetMap: © OpenStreetMap (and) contributors, CC-BY-SA

Title: Transboundary Screening
Document no: IMW01_Fig5.D.1
Created by: CB
Checked by: AP
Approved by: SB





Moor Vannin

Figure 5.D.2
Proximity of Other Jurisdictions to the Scoping Boundary (Wider Context)

- Offshore Array
- Exclusive Economic Zone



Coordinate System: ETRS 1989 UTM Zone 30N
Scale@A3: 1:6,000,000

0 75 150 300 Kilometres

0 35 70 140 Nautical Miles

REV	REMARK	DATE
	First issue	29/09/2023

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World Ocean Base: Esri, GEBCO, Garmin, NaturalVue.

Title: EEZ Boundaries
Document no: IMW01_Fig5.D.2
Created by: GB
Checked by: AP
Approved by: SB

1.4 Consultation

1.4.1.1 If transboundary effects are identified as having the potential to give rise to likely significant effect, the Applicant anticipates that DoI will notify the relevant governments and their statutory consultees, initiating contact between them and the Applicant, as well as incorporate any responses in the Scoping Opinion. The parties that the Applicant anticipates will be notified and consulted with are listed below, however it should be noted that this list is not necessarily exhaustive and the Scoping Report will be made widely available and publicised on the Applicant's website:

- Natural England;
- Natural Resources Wales;
- Department of Agriculture, Environment and Rural Affairs of Northern Ireland;
- NatureScot;
- Irish National Parks & Wildlife Service;
- Joint Nature Conservation Committee;
- Marine Management Organisation;
- Historic England;
- National Federation of Fishermen's Organisations;
- Civil Aviation Authority;
- Maritime and Coastguard Agency;
- Chamber of Shipping; and
- Ministry of Defence.

1.4.1.2 The Applicant may also consult with these relevant transboundary governments, their statutory consultees, or private companies that have a transboundary interest as necessary and appropriate. To date, the Applicant has consulted with the following parties with transboundary interests:

- UK Chamber of Shipping;
- Developers of the Morgan, Mona and Morecambe offshore wind farm projects;
- Stena Line; and
- Natural England.

1.5 Screening by topic

1.5.1 Overview

1.5.1.1 This section provides a transboundary screening for offshore and onshore transboundary effects broken down into the topics as set out within the Scoping Report, detailing the conclusions of the transboundary screening for each topic along with a justification of those conclusions.

1.5.2 Marine Geology, Oceanography & Physical Processes

1.5.2.1 The Study Area for marine geology, oceanography and physical processes is described within Chapter 7 of this Scoping Report. The far-field Study Area identifies coastal and

seabed areas within the vicinity of the Proposed Development that may be influenced by marine processes, and this covers areas of English waters.

- 1.5.2.2 Therefore, **transboundary effects may occur** on physical processes receptors outside of the Isle of Man Territorial Seas in English waters and will therefore be considered further within the Environmental Impact Assessment (EIA), subject to consultation and engagement with the relevant interested parties.

1.5.3 Marine Water & Sediment Quality

1.5.3.1 The Study Area for marine water and sediment quality is described within Chapter 8 of this Scoping Report and is broadly aligned with that of Chapter 7, Marine Geology, Oceanography & Physical Processes. The far-field Study Area identifies coastal and seabed areas within the vicinity of the Proposed Development that may be influenced by marine water and sediment quality and this covers areas of English waters.

- 1.5.3.2 Therefore, **transboundary effects may occur** on marine water and sediment quality receptors outside of the Isle of Man Territorial Seas in English waters and will therefore be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.4 Offshore Ornithology

1.5.4.1 The Study Area for offshore ornithology is described within Chapter 9 of this Scoping Report. Although the Study Area for offshore ornithology only considers the Offshore Array plus a 4 km buffer, due to the wide foraging and migratory ranges of ornithological receptors identified within Chapter 9, Offshore Ornithology, it is considered likely that transboundary effects may occur.

- 1.5.4.2 As **transboundary effects may occur** on offshore ornithology receptors outside of the Isle of Man Territorial Seas in English, Welsh, Scottish, Irish and Northern Irish waters and territories, and potentially further afield these potential effects will be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.4.3 Where transboundary protected sites are designated for ornithological features and may be affected, this will be considered and addressed within the Transboundary Protected Sites Assessment (PSA). For further information, please refer to Annex 32.A, Transboundary PSA Screening.

1.5.5 Benthic Subtidal & Intertidal Ecology

1.5.5.1 The Study Area for benthic subtidal and intertidal ecology is described within Chapter 10 of this Scoping Report. This consists of the footprint of the Proposed Development, plus a precautionary buffer of 12 km to account for the area over which suspended sediment might disperse following disturbance as a result of activities associated with the Proposed Development. This covers areas of English waters.

- 1.5.5.2 Therefore, **transboundary effects may occur** on benthic subtidal and intertidal ecological receptors outside of the Isle of Man Territorial Seas in English waters and will therefore be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.5.3 Where transboundary protected sites are designated for benthic features and may be affected, this will be considered and addressed within the Transboundary PSA. For further information, please refer to Annex 32.A, Transboundary PSA Screening.

1.5.6 Marine Mammals & Megafauna

1.5.6.1 The Study Area for marine mammals and megafauna is described within Chapter 11 of this Scoping Report. Due to the high level of mobility, and variation in foraging distances and seasonal distribution of marine mammals and megafauna, the Regional

Study Area considers Management Units (MUs) for each species, which each cover multiple other jurisdictions outside of the Isle of Man Territorial Seas.

- 1.5.6.2 Therefore, **transboundary effects may occur** on marine mammals and megafauna receptors outside of the Isle of Man Territorial Seas in English, Welsh, Scottish, Irish and Northern Irish waters, and potentially further afield and will therefore be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.
- 1.5.6.3 Where transboundary protected sites are designated for marine mammal features and may be affected, this will be considered and addressed within the Transboundary PSA. For further information, please refer to Annex 32.A, Transboundary PSA Screening.

1.5.7 Fish & Shellfish Ecology

- 1.5.7.1 The Study Area for fish and shellfish is described within Chapter 12 of this Scoping Report. The secondary impacts Study Area consists of the footprint of the Proposed Development, plus a precautionary buffer of 12 km to account for the area over which suspended sediment might disperse following disturbance as a result of activities associated with the Proposed Development. This covers areas of English waters.
- 1.5.7.2 A larger Study Area to identify receptors that may be affected by underwater piling noise is also presented and consists of the footprint of the proposed development, plus a precautionary buffer of 50 km. This covers areas of English, Scottish, Welsh and Northern Irish waters.
- 1.5.7.3 Therefore, **transboundary effects may occur** on fish and shellfish receptors outside of the Isle of Man Territorial Seas in the English, Scottish, Welsh and Northern Irish waters, and will therefore be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.8 Commercial Fisheries

- 1.5.8.1 The Study Area for commercial fisheries is described within Chapter 13 of this Scoping Report. The Study Area considers of the International Council for the Exploration of the Sea's (ICES) statistical rectangles adjacent to the Proposed Development and covers areas of Welsh, English, Scottish, Irish and Northern Irish waters. It should be noted that fishing fleets from further afield may fish within these waters, for example, Belgian beam trawlers were identified within Chapter 13, Commercial Fisheries, as being active across the Study Area.
- 1.5.8.2 Therefore, **transboundary effects may occur** on commercial fisheries receptors outside of the Isle of Man Territorial Seas in the English, Scottish, Welsh, Irish and Northern Irish waters, and potentially further afield. Therefore, these effects will be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.9 Shipping & Navigation

- 1.5.9.1 The Study Area for shipping and navigation is described within Chapter 14 of this Scoping Report. The Study Area consists of the footprint of the Proposed Development, plus a precautionary buffer of 10 nm to encompass any vessel routing which may be impacted. This covers areas of English and Welsh waters. It should be noted that vessels passing through this Study Area may originate from other jurisdictions, for example the Stena Line ferry route which passes through the Offshore Array area on its route between Liverpool and Belfast.
- 1.5.9.2 Therefore, **transboundary effects may occur** on shipping and navigation receptors outside of the Isle of Man Territorial Seas in English, Welsh and Northern Irish waters, and potentially further afield. Therefore, these effects will be considered further within

the Navigational Risk Assessment (NRA), subject to consultation and engagement with the relevant interested parties.

1.5.10 Seascape, Landscape and Visual Impact Assessment

- 1.5.10.1 The Study Area for the Seascape, Landscape and Visual Impact Assessment (SLVIA) is described within Chapter 15 of this Scoping Report. The Study Area has been defined by a radius of 60 km from the Offshore Array boundary and represents the outer limit of the area where significant visual effects could occur. This covers areas of England and Scotland.
- 1.5.10.2 Therefore, **transboundary effects may occur** on SLVIA receptors outside of the Isle of Man Territorial Seas in England and Scotland, and will therefore be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.11 Offshore Archaeology & Cultural Heritage

- 1.5.11.1 The Study Area for offshore archaeology and cultural heritage is described within Chapter 16 of this Scoping Report. This consists of the footprint of the Proposed Development, plus a 500 m buffer to account for archaeological features themselves or their potential mitigation measures extending into the offshore element of the Proposed Development. This covers areas that lie within English waters.
- 1.5.11.2 Therefore, **transboundary effects may occur** on offshore archaeology and cultural heritage receptors outside of the Isle of Man Territorial Seas in English waters. Therefore, these effects will be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.12 Military & Civil Aviation

- 1.5.12.1 The Study Area for military and civil aviation is described within Chapter 17 of this Scoping Report. This consists of the footprint of the Proposed Development, plus a 60 nm buffer to account for the operational ranges of Primary Surveillance Radars (PSRs) installed on civil and military airfields. This covers areas of English, Welsh, Scottish, Irish and Northern Irish waters.
- 1.5.12.2 Therefore, **transboundary effects may occur** on military and civil aviation receptors outside of the Isle of Man Territorial Seas in English, Welsh, Scottish, Irish and Northern Irish waters. Therefore, these effects will be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.13 Other Marine Users & Activities

- 1.5.13.1 The Study Area for other marine users and activities is described within Chapter 18 of this Scoping Report. The Deposition Impacts Study Area consists of the Offshore Array area and Offshore Electrical Connection Search Area plus a precautionary 12 km buffer to account for the area over which suspended sediment might disperse following disturbance as a result of activities associated with the Proposed Development. The Marine Traffic Study Area consists of the Offshore Electrical Connection Search Area plus a 2 nm buffer and the Offshore Array plus a 10 nm buffer, as aligned with Chapter 14, Shipping & Navigation. Together, these Study Areas cover areas of English and Welsh waters.
- 1.5.13.2 Therefore, **transboundary effects may occur** on other marine users and activities receptors outside of the Isle of Man Territorial Seas in English and Welsh waters. Therefore, these effects will be considered further within the EIA, subject to consultation and engagement with the relevant interested parties.

1.5.14 Onshore Ecology

- 1.5.14.1 The Study Area for onshore ecology is described within Chapter 19 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.
- 1.5.14.2 Migratory birds are considered in Chapter 9, Offshore Ornithology and any transboundary effects on migratory birds will be considered within the Offshore Ornithology EIA chapter.
- 1.5.14.3 Therefore, **it is not considered that transboundary effects could occur** on onshore ecology receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.15 Land use, Geology & Ground Conditions

- 1.5.15.1 The Study Area for land use, geology and ground conditions is described within Chapter 20 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.
- 1.5.15.2 Therefore, **it is not considered that transboundary effects could occur** on land use and ground conditions receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.16 Traffic & Transport

- 1.5.16.1 The Study Area for traffic and transport is described within Chapter 21 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.
- 1.5.16.2 Therefore, **it is not considered that transboundary effects could occur** on traffic and transport receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.17 Onshore Archaeology & Cultural Heritage

- 1.5.17.1 The Study Area for onshore archaeology and cultural heritage is described within Chapter 22 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.
- 1.5.17.2 Therefore, **it is not considered that transboundary effects could occur** on archaeology and cultural heritage receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.18 Noise & Vibration

- 1.5.18.1 The Study Area for noise and vibration is described within Chapter 23 of this Scoping Report. This Study Area extends beyond the limits of the Isle of Man Territorial Seas, but not to any transboundary onshore areas where offshore noise could impact onshore receptors.
- 1.5.18.2 Therefore, **it is not considered that transboundary effects could occur** on noise and vibration receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.
- 1.5.18.3 This relates solely to onshore noise and vibration receptors. The potential for effects of noise and vibration on offshore transboundary receptors are covered within the individual offshore topics (for example section 1.5.6, Marine Mammals & Megafauna, and section 1.5.7, Fish & Shellfish Ecology).

1.5.19 Air Quality

1.5.19.1 The Study Area for air quality is described within Chapter 24 of this Scoping Report. Based upon the relatively small buffer distances that are used to establish the Study Area, the Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.

1.5.19.2 Therefore, **it is not considered that transboundary effects could occur** on air quality receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.20 Hydrology, Hydrogeology & Flood Risk

1.5.20.1 The Study Area for hydrology, hydrogeology and flood risk is described within Chapter 25 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.

1.5.20.2 Therefore, **it is not considered that transboundary effects could occur** on hydrology, hydrogeology and flood risk receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.21 Landscape & Visual Impact Assessment (LVIA)

1.5.21.1 The Study Area for landscape and visual impact assessment is described within Chapter 26 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.

1.5.21.2 Therefore, **it is not considered that transboundary effects could occur** on landscape and visual impact amenity receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.22 Materials & Waste

1.5.22.1 The Study Area for materials and waste is described within Chapter 27 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.

1.5.22.2 Therefore, **it is not considered that transboundary effects could occur** materials and waste receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.23 Climate Change

1.5.23.1 The Study Area for climate change is described within Chapter 28 of this Scoping Report. It is recognised that Green House Gas (GHG) emissions to the atmosphere are not geographically limited and have a global effect rather than directly affecting a specific local receptor. The receptor for GHG emissions is the global atmosphere, therefore effects from the Proposed Development's GHG emissions on the climate will be considered on a global scale within the Climate Change EIA chapter and will therefore not be considered within the transboundary assessment within the EIA.

1.5.23.2 The Study Area relating to the impacts from climate change on the Proposed Development will be defined as the area within which it is anticipated all associated onshore and offshore infrastructure will be installed, which does not extend beyond the limits of the Isle of Man Territorial Seas.

1.5.23.3 Therefore, **it is not considered necessary to give specific consideration to transboundary effects**, and this will not be given further consideration within the EIA.

1.5.24 Socio-Economics, Tourism & Recreation

1.5.24.1 The Study Area for socio-economics, tourism and recreation is described within Chapter 29 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be localised to the Isle of Man.

1.5.24.2 Therefore, **it is not considered that transboundary effects could occur** on socio-economics and tourism receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.24.3 However, socio-economic benefits may be investigated at a regional level, covering the opportunities for multiple stakeholders outside the Isle of Man jurisdiction. Therefore, the Applicant will review this approach following the receipt of consultation responses post-scoping.

1.5.25 Major Accidents & Disasters

1.5.25.1 Chapter 30, Major Accidents & Disasters, sets out that all potential impacts and receptors are covered elsewhere in other Chapters. Therefore, it is not proposed to produce a Major Accidents & Disasters EIA Chapter and thus **transboundary considerations will be captured within these other Chapters**.

1.5.26 Human Health & Wellbeing

1.5.26.1 The Study Area for human health and wellbeing is described within Chapter 31 of this Scoping Report. This Study Area does not extend beyond the limits of the Isle of Man Territorial Seas and any effects are expected to be highly localised.

1.5.26.2 Therefore, **it is not considered that transboundary effects could occur** on human health and wellbeing receptors outside of the Isle of Man Territorial Seas. Therefore, this will not be given further consideration within the EIA.

1.5.27 Protected Sites

1.5.27.1 It is considered that **transboundary effects may occur** on protected sites outside of the Isle of Man Territorial Seas.

1.5.27.2 A Transboundary PSA Screening has been produced (Annex 32.A) and provides a Screening assessment for transboundary sites. Please refer to this Annex for considerations on transboundary protected sites.

1.6 Conclusions

1.6.1.1 Table 1.2 provides a summary of the topics screened in for transboundary assessment. These topics will be considered further within the EIA, subject to consultation with the relevant interested parties.

Table 1.2: Summary transboundary screening table.

Topic	Screened in/ out	Transboundary jurisdictions potentially affected
Marine Geology, Oceanography & Physical Processes	Screened in	England
Marine Water & Sediment Quality	Screened in	England
Offshore Ornithology	Screened in	England, Wales, Scotland, Northern Ireland, Republic of Ireland
Benthic Subtidal & Intertidal Ecology	Screened in	England
Marine Mammals & Megafauna	Screened in	England, Wales, Scotland, Northern Ireland, Republic of Ireland
Fish & Shellfish Ecology	Screened in	England, Wales, Scotland

Topic	Screened in/ out	Transboundary jurisdictions potentially affected
Commercial Fisheries	Screened in	England, Wales, Scotland, Northern Ireland, Republic of Ireland, Belgium
Shipping & Navigation	Screened in	England, Wales, Scotland, Northern Ireland, Republic of Ireland
Seascape, Landscape & Visual Impact Assessment	Screened in	England, Scotland
Offshore Archaeology & Cultural Heritage	Screened in	England, Scotland
Military & Civil Aviation	Screened in	England, Scotland, Wales
Other Marine Users & Activities	Screened in	England, Scotland, Wales
Onshore Ecology	Screened out	
Land Use, Geology & Ground Conditions	Screened out	
Traffic & Transport	Screened out	
Onshore Archaeology & Cultural Heritage	Screened out	
Noise & Vibration	Screened out	
Air Quality	Screened out	
Hydrology, Hydrogeology & Flood Risk	Screened out	
Landscape & Visual Impact Assessment	Screened out	
Materials & Waste	Screened out	
Climate Change	Screened out (GHG emissions from the Proposed Development on the climate will be considered on a global scale within the Climate Change EIA chapter)	
Socio-Economics, Tourism & Recreation	Screened out	
Major Accidents & Disasters	N/A (Considered within other Chapters)	
Human Health & Wellbeing	Screened out	
Protected Sites	Screened in (Considered further within	England, Wales, Scotland, Northern Ireland, Republic of Ireland

Topic	Screened in/ out	Transboundary jurisdictions potentially affected
	Annex 31.A, Transboundary PSA Screening)	

1.7 References

Isle of Man Government (2016b), 'Isle of Man Strategic Plan 2016'.

PINS (2020), 'Advice Note Twelve (version 6): Transboundary Impacts and Process', Bristol.

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Moor Vannin Offshore Wind Farm

Annex 6.A - Draft Community Engagement and Consultation Action Strategy

October 2023

Prepared Name, Orsted, XX Month 202X
Checked
Accepted
Approved

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Ver. A

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NOTE:

This document is submitted as a DRAFT of the Applicant's proposed Community Engagement, Consultation and Action Strategy, which will be published in January 2024 ahead of the Community Consultation Events. It has been submitted as part of the Scoping Report for review to the Isle of Man Government and will be updated in line with the comments received as part of the Mooir Vannin Scoping Opinion.

1 Introduction

This Community Engagement, Consultation and Action Strategy (CECAS) sets out in detail how we, Mooir Vannin Offshore Wind Farm Limited, will consult with the community during the development of the proposed Mooir Vannin Offshore Wind Farm. It explains the opportunities for you to come and meet us, to ask questions and to comment on our plans.

Community engagement is a vital stage in the development of our proposals. We want to hear your views and work with you to develop our plans responsibly and in a manner that supports community interests. Working in this way will ensure that we develop a project that benefits your community.

This CECAS provides:

- Information on our proposals
- Information on the planning process
- How you can be involved.

We are keen to hear from anyone with an interest in our Proposed Development. This includes interested parties, residents, businesses, community groups, and landowners.

2 Who we are

Mooir Vannin Offshore Wind Farm Limited is ultimately owned by Ørsted AS; a renewable energy company taking tangible action to create a world that runs entirely on green energy. From offshore and onshore wind farms to renewable hydrogen and biogas solutions, we're working on projects that will make our future green. For over a decade we've worked together with our partners, our suppliers, our people, our communities, and governments to become a global leader in offshore wind.

We want to use our experience and expertise in offshore wind to help the Isle of Man truly realise its ambitions and the objectives established under the Climate Change Plan 2022-27.

3 Mooir Vannin Offshore Wind Farm

In May 2014, the Isle of Man Government issued an Invitation to Tender for an offshore wind farm lease area wholly within Isle of Man territorial waters. The location of this lease area was carefully selected by the Isle of Man Government to bring the maximum benefit and minimum disruption to the Isle of Man. Then called DONG Energy Isle of Man (UK) Limited, we took part in the competitive bidding process and were selected as 'preferred bidder' in October 2014. In November 2015 we signed an Agreement for Lease with the Isle of Man Government for an area of search of approximately 253 km² to the east of the Isle of Man. Since then, Mooir Vannin Offshore Wind Farm Limited has

conducted a number of environmental surveys and technical studies within the Isle of Man Territorial Seas off the east coast to determine the suitability for an offshore wind farm.

The wind farm will be located to the Northeast of the Isle of Man within an area of approximately 253km² (see figure 1). It will be located at the closest point approximately 11 kilometers from the coast at Maughold Head, and wholly within the Isle of Man Territorial Seas. When built, and with a capacity in the region of 1.4GW, the wind farm will support the Isle of Man to meet its ambitious renewable energy and net zero emissions targets.

The name Mooir Vannin means Irish Sea in the Manx language, although its literal meaning is 'Sea of the Isle of Man' which is fitting as this new project will be located within Isle of Man territorial waters.

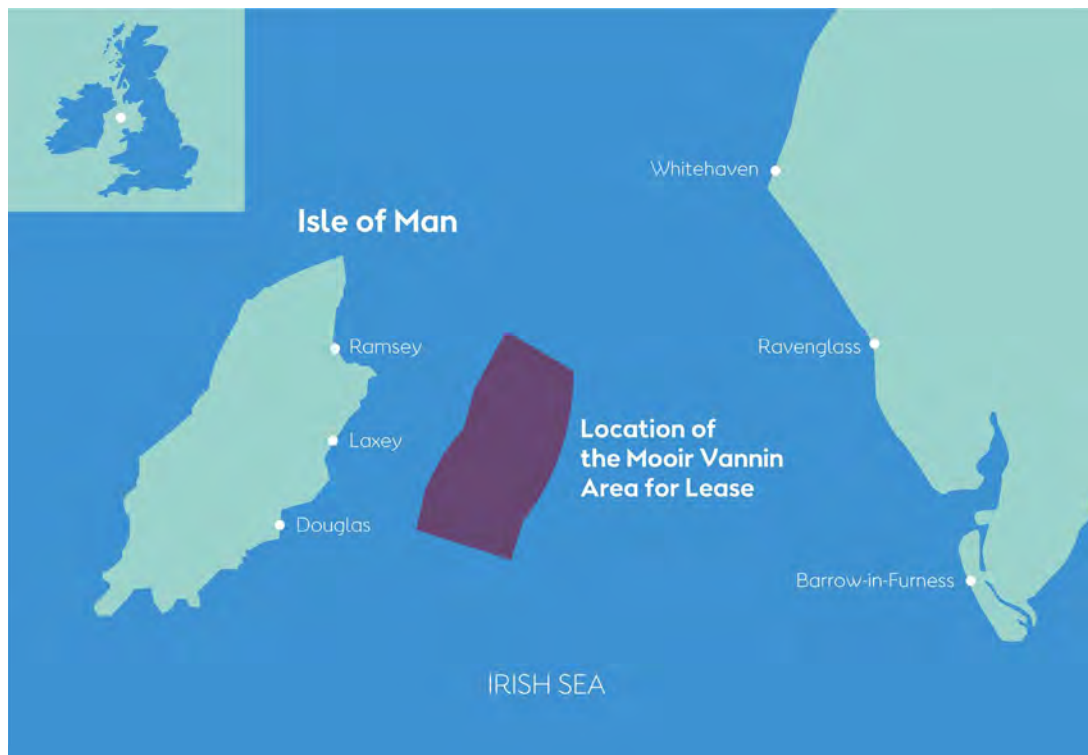


Figure 1 Location of the proposed Mooir Vannin offshore wind farm

We are currently reviewing the best way to bring some of the energy generated from the wind farm to the Isle of Man. Electricity from offshore wind farms is usually brought onshore via underground subsea cables, which are buried onshore to a grid connection location. The point where the subsea cables reach land is known as "landfall". We are assessing potential cable route options and landfall locations on the east coast of the Isle of Man.

We are also looking at the best way to export energy from the wind farm to neighboring countries. This will require additional infrastructure located outside of the Isle of Man's jurisdiction. For this, we are also assessing potential cable route options and landfall locations in the North West of England, Wales and the east coast of Ireland against technical, social, and environmental considerations.

This document relates to the consultation process for the infrastructure wholly located within the jurisdiction of the Isle of Man; this is known as our 'Proposed Development' (see Section 4). A separate consultation document will be prepared for those elements located in other jurisdictions.

4 Our Proposed Development

Our Proposed Development consists of the following components shown visually in figure 2 in blue:

- The "Offshore Array": This is the term used to describe the following elements:
 - Up to 100 wind turbines and their foundations
 - Array and export cables
 - Offshore substations
- The "Offshore Electrical Connection Cable": This term is used to describe the Electrical Cable(s) connecting the Offshore Array to landfall in the Isle of Man.
- The "Terrestrial Electrical Connection Cable": The terrestrial route for the Electrical Cable(s) between the Offshore Electrical Connection Cable at landfall and the Isle of Man point of connection to the Manx grid.
- Onshore Substation: A substation housing the electrical infrastructure required for the Terrestrial Electrical Connection Cable to connect to the point of connection to the Manx grid.

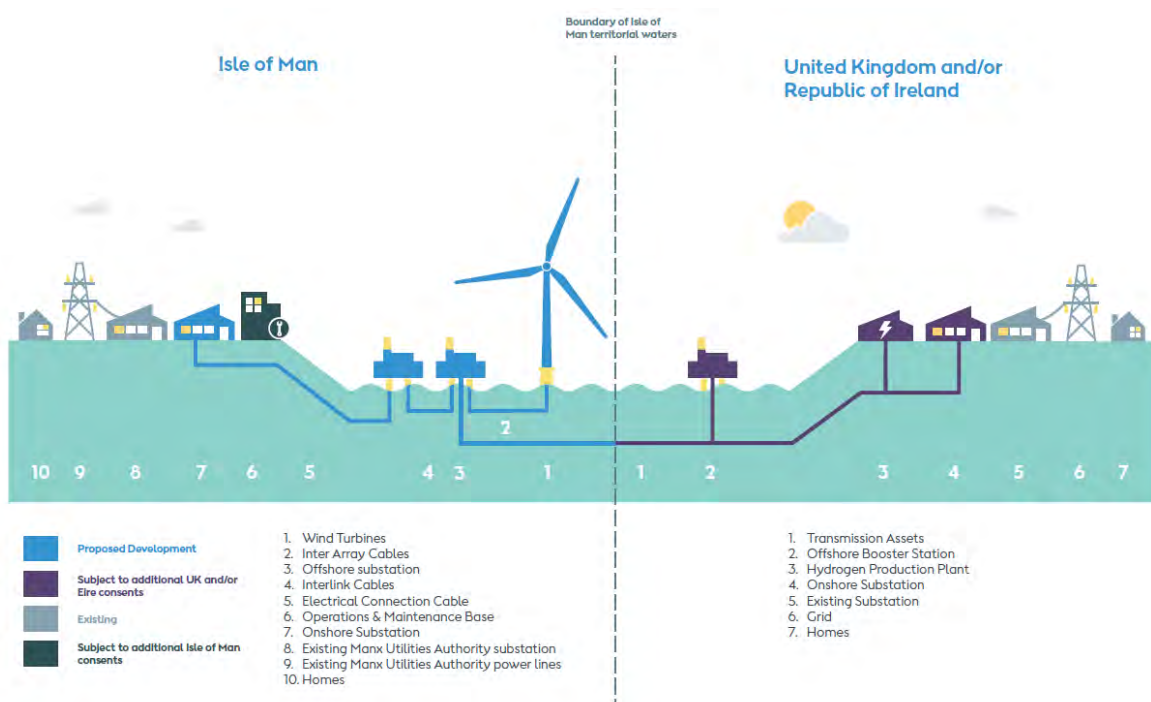


Figure 2 Components of our Proposed Development and wider project

We are exploring options available for an Operations and Maintenance (O&M) base in the Isle of Man, however this will be subject to a separate planning permission once the location and function of the facility has been determined.

5 The planning process

Separate consenting applications are required for the onshore and offshore elements of the Proposed Development.

- For the offshore wind farm and subsea cables to the Isle of Man, an application for a Marine Infrastructure Consent (MIC) is required under the Marine Infrastructure Management Act 2016 (MIMA).
- A planning application under the Town and Country Planning Act 1999 (TCPA) will also be required for the onshore infrastructure down to Mean Low Water Springs (MLWS).

Secondary legislation is currently being developed by the Isle of Man Government for MIMA, which will provide further detail on the consenting regime and formal consultation requirements for the offshore works.

The key stages in the planning process are shown in figure 3 below. This document sets out how we will engage with you throughout the planning process. This includes during the pre-application period.

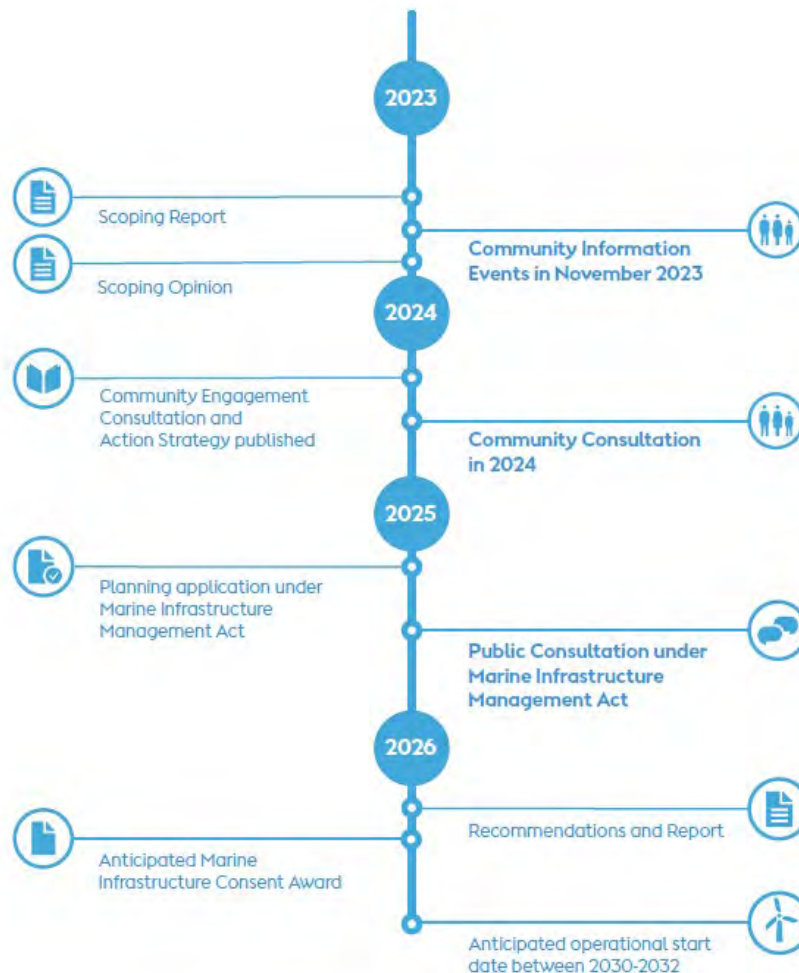


Figure 3 Planning Timeline

5.1 Requirement for public consultation

There are two distinct requirements for formal consultation under MIMA. While these consultations relate specifically to the offshore infrastructure, the Applicant shall apply this process voluntarily to the onshore infrastructure in the absence of specific consultation requirements under the TCPA.

The first is a 40 day 'Pre-Application Consultation' period, which is to begin once a Scoping Opinion has been issued by the Isle of Man Government. This consultation is anticipated to take place in April/May 2024 and conclude prior to the Isle of Man TT races.

During this consultation period we will consult with the community as well as statutory and non-statutory consultees. Consultation materials will be made available during this period (the nature and form of which are yet to be determined).

All responses to this consultation will be recorded, analysed and responded to in a Consultation Report which will accompany our application for offshore consent. The Report will form part of our application for Marine Infrastructure Consent (MIC) to the Isle of Man Government and will demonstrate how we have used your feedback to refine the Proposed Development's design.

The second consultation requirement begins once we have submitted our application to the Isle of Man Government. This will involve a 30-working day 'Public Consultation'. It is anticipated that this public consultation will take place in Q1 2025.

In addition to these statutory consultation requirements, we commit to complying with any new consultation requirements published in any future secondary legislation during the preparation of our application for consent.

The statutory consultations set out above will form only part of our public engagement during pre-application. Section 8 sets out our full range of engagement activities during the pre-application phase drawing on best practice from other consenting regimes and projects of a similar scale and location. In addition to these activities you are welcome to get in touch at any time. Our contact details are listed at the end of this document.

6 Who we want to hear from

We recognise the importance of engaging with the community across the Isle of Man during the pre-application stage, to build a positive relationship with you and ensure a broad range of perspectives are considered early on. Communities include all Isle of Man residents and community groups based on the Isle of Man. It especially includes anyone who may be interested in or feel in any way impacted by our plans.

Community engagement will run alongside engagement with:

- Isle of Man Government
- Statutory consultees identified in MIMA and by the Department of Infrastructure
- Technical and scientific experts
- Transboundary consultees (organisations and governments outside of the Isle of Man jurisdiction)

7 Inclusivity

We are committed to engaging with 'hard to reach' groups such as young adults, the elderly or disabled who may find it harder to be involved in the consultation process and need additional support and access to consultation materials. We will include measures to ensure we communicate effectively with these groups, so you are actively engaged. Information will be made available both online and offline and in several formats. We will be directly engaging with representative groups in the community to ensure that hard to reach groups can provide their comments and feedback.

Should you require this document in large print, audio or braille then please contact us using the details provided in section 12.

8 How we will engage with you

As part of our commitment to inclusive consultation, a range of channels will be available for the community to share their views:

8.1 Community events

We will hold Community Consultation Events during the pre-application phase, which are open to all interested members of the public (see 8.1.2).

Before these events take place, we will brief relevant Members of the House of Keys (MHKs) along the East Coast to make them aware of the public engagement plans and to introduce them directly to the plans.

For all events, 3 weeks' notice will be given to the community and they will be promoted through various channels during this time including local press and social media. Attendees will have the opportunity to view information about the Proposed Development, discuss with members of the team and provide feedback.

8.1.1 Face to face meetings

Following publication of this CECAS, we will reach out to stakeholder and community groups to introduce the Proposed Development. This will include initial meetings with members of the community and stakeholders.

8.1.2 Community Consultation Events - April 2024

In April/May 2024 we will then run community events during the 40-day pre-application consultation period required under the Marine Infrastructure and Management Act 2016. In advance of these events, we will produce and publish community consultation material which will be made available online at www.orsted.im/mooirvannin. These events will be a series of formal, drop-in sessions to discuss this material in greater detail, seek feedback on our proposals and answer any questions you may have. Feedback forms will be made available at these events and any feedback will be included as part of the pre-application consultation. The feedback received will be

documented and included as part of a Consultation Report at the time of application for consent.

8.2 Newsletters

Over the course of the pre-application phase, we will develop and distribute two newsletters: in March and September 2024. These will provide residents with updates, as well as any upcoming events, inviting you to attend. The newsletters will also display details of how to keep in touch and where to access information. A digital version of the newsletter will also be available.

Hard copies will be distributed to residents and will be available at Community Access Points (see table 1).

8.3 Website

A Moir Vannin Project website www.orsted.im/mooirvannin has been set up, providing an overview of the Proposed Development and will be regularly updated to include latest news, including newsletters and any application documents. The website will also include a feedback form for stakeholders to provide comments throughout the pre application stage.

9 What we want your views on

We will be seeking feedback on all aspects of our Proposed Development. We will encourage communities to give your views about how our proposals may affect you or your area. For example, we will be seeking feedback to help develop our proposals regarding matters such as:

- Environmental issues (e.g. local/marine ecology, and wildlife)
- Economic impacts (e.g. commercial activities such as shipping and fisheries, and employment opportunities)
- Social issues (e.g. Public Rights of Way, noise and vibration during construction, and visual impacts)

9.1 Environmental Impact Assessment

The Isle of Man Strategic Plan 2016 requires social, environmental and economic impacts to be assessed through a process of Environmental Impact Assessment (EIA). An EIA ensures that plans are made in the knowledge of all the likely effects of the development, and of the proposals for mitigating adverse effects and enhancing positive effects. The process involves assessing the current state of the environment without the Proposed Development, and then any effects resulting from the construction, operation and decommissioning of the Proposed Development.

Anyone with an interest in the Proposed Development is welcome to comment on the following reports, which will be made available on the project website (orsted.im) as part of the EIA process during the pre-application period and as the consent applications are prepared:

9.1.1 Scoping Report

The Scoping Report adopts a proportionate approach to Environmental Impact Assessment (EIA) identifying all potential impacts and providing an initial assessment of Likely Significant Effects (LSE). The report sets out the next steps for detailed assessment in the Environmental Statement where LSE is concluded and evidence to be brought forward where no LSE is concluded. The Scoping Report will adopt a format which is “Uniquely Manx”, by adopting tailor made approaches to the Isle of Man stakeholders that combine best practice and innovation. The Isle of Man Government will provide a Scoping Opinion in response to our formal request.

9.1.2 Consultation Materials

To support the formal pre-application consultation period in April/May 2024, we will build on the findings of the Scoping Report to develop a series of materials for community consultation. These materials will be made available to anyone with an interest in the Proposed Development at Community Access Points (see table 1) and at consultation events held during April/May 2024.

10 Consultation Report

We will carefully consider and respond to the feedback you provide on the Proposed Development and incorporate this into our final consent applications. As part of the application, we intend to publish a Consultation Report, which will:

- Describe our consultation process;
- Provide a summary of all consultation responses (from communities, stakeholders, non-statutory and statutory bodies);
- Describe changes that we have made to our application as a result of what you said to us; and
- Explain why, if any, changes were not made to any areas of the application you told us needed changing.

11 Community Access Points

Throughout this project, hard copies of newsletters and consultation materials will be available at the following Community Access Points:

Table 1- List of Community Access Points

Location	Address 1	Address 2	Address 3	Address 4	Postcode
Douglas	Town Hall	Ridgeway Street	Douglas	Isle of Man	IM1 1EP
Castletown	Town Hall	Farrant’s Way	Castletown	Isle of Man	IM9 1NR
Peel	Town Hall	Derby Road	Peel	Isle of Man	IM5 1RG
Ramsey	Town Hall	Parliament Square	Ramsey	Isle of Man	IM8 1RT
Garff Commissioners	Commissioners Office	35 New Road	Laxey	Isle of Man	IM4 7BG

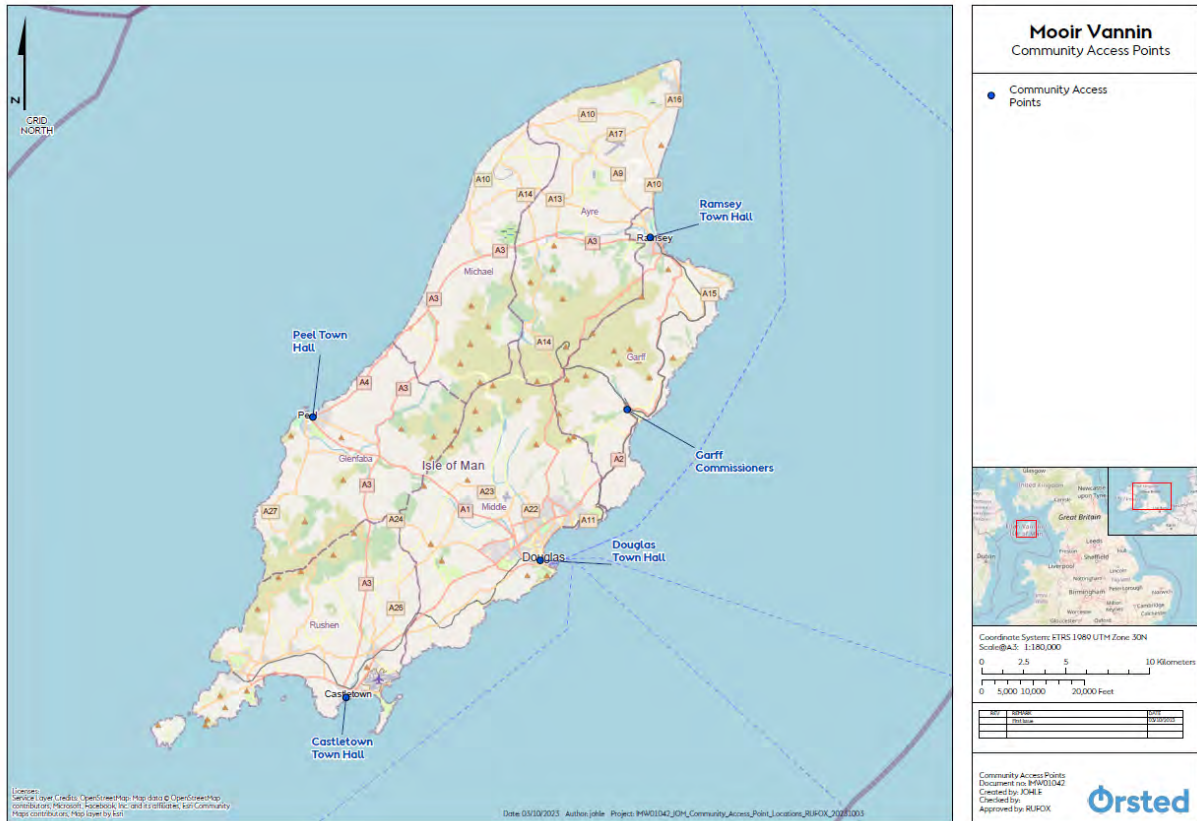


Figure 4 Map of Community Access Points

12 How to get in touch

Send us an email:
moirvannin@orsted.com

Send us a letter:

We are currently acquiring a Freepost PO Box for inclusion in the final version to be published January 2024.

Visit our webpage:
www.orsted.im/moorvannin

13 Data protection

When responding to our pre-application consultation your personal data will be stored in compliance with GDPR by Moir Vannin Offshore Wind Limited and according to our privacy policy which can be accessed at www.orsted.im. Your details may however be passed on to the Isle of Man Government to ensure that our pre-application consultation is sufficient and appropriately reported.

14 Questions to consultees on draft CECAS

- Do you agree with our approach to Community Engagement?
- Are there any other ways you would like us to engage with the Community beyond those set out in this chapter?
- Do the proposed communication channels offer adequate breadth and inclusivity?

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Moor Vannin Offshore Wind Farm

Annex 20.A - Land Use Impact Magnitude & Receptor Sensitivity

Prepared SLR Consulting, October 2023
Checked Hannah Towner-Roethe & Tobias Naylor, Orsted, October 2023
Accepted Francesca De Vita, Orsted, October 2023
Approved Julian Carolan, Orsted, October 2023

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Land Use Impact Magnitude & Receptor Sensitivity

Table 1: Impact Magnitude

Magnitude of impact (change)	Typical Description
Major	<p>Geology: loss of geological feature / designation and/ or quality and integrity, severe damage to key characteristics, features or elements.</p> <p>Soil: physical removal or permanent sealing of soil resource or agricultural land.</p> <p>Contamination:</p> <ol style="list-style-type: none"> Human health: significant contamination identified. Contamination levels significantly exceed background levels and relevant screening criteria (e.g. category 4 screening levels) SP1010 (CL:AIRE, 2014) with potential for significant harm to human health. Contamination heavily restricts future use of land; Surface water: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a). <p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <ol style="list-style-type: none"> Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements. e.g. direct acquisition and demolition of buildings and direct development of land to accommodate highway assets; and/or Introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. <p>WCH:</p> <p>>500m increase (adverse) / decrease (beneficial) in WCH journey length.</p>
Moderate	<p>Geology: partial loss of geological feature / designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.</p> <p>Soils: permanent loss / reduction of one or more soil function(s) and restriction to current or approved future use (e.g through degradation, compaction, erosion of soil resource.)</p> <p>Contamination:</p> <ol style="list-style-type: none"> Human health: contaminant concentrations exceed background levels and are in line with limits of relevant screening criteria (e.g. category 4 screening levels) SP1010 (CL:AIRE, 2014). Significant contamination can be present. Control / remediation measures are required to reduce risks to human health / make land suitable for intended use; Surface water: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a). <p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <ol style="list-style-type: none"> Partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or

Magnitude of impact (change)	Typical Description
	<p>2. Introduction (adverse) or removal (beneficial) of severe severance with limited / moderate accessibility provision.</p> <p>WCH: > 250m - 500m increase (adverse) / decrease (beneficial) in WCH journey length</p>
Minor	<p>Geology: minor measurable change in geological feature / designation attributes, quality or vulnerability; minor loss of, or alteration to, one or more) key characteristics, features or elements.</p> <p>Soils: temporary loss/ reduction of one or more soil function(s) and restriction to current or approved future use (e.g through degradation, compaction, erosion of soil resource.)</p> <p>Contamination:</p> <ol style="list-style-type: none"> 1. Human health: contaminant concentrations are below relevant screening criteria (e.g. category 4 screening levels) SP1010 (CL:AIRE, 2014). Significant contamination is unlikely with a low risk to human health. Best practice measures can be required to minimise risks to human health; 2. Surface water: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and 3. Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a). <p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <ol style="list-style-type: none"> 1. A discernible change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements, e.g, amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property, businesses, community assets or agricultural holdings; and/or 2. Introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. <p>WCH: >50m - 250m increase (adverse) or decrease (beneficial) in WCH journey length.</p>
Negligible	<p>Geology: very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature/ designation. Overall integrity of resource not affected.</p> <p>Soils: no discernible loss/ reduction of soil function(s) that restrict current or approved future use.</p> <p>Contamination:</p> <ol style="list-style-type: none"> 1. Human health: contaminant concentrations substantially below levels outlined in relevant screening criteria (e.g. category 4 screening levels) SP1010 (CL:AIRE, 2014). No requirement for control measures to reduce risks to human health / make land suitable for intended use; 2. Surface water; use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and 3. Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a).

Magnitude of impact (change)	Typical Description
	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <ol style="list-style-type: none"> 1. Very minor loss or detrimental alteration to one or more characteristics, features or elements. e.g. acquisition of non operational land or buildings not directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or 2. Very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. <p>WCH: <50m increase (adverse) or decrease (beneficial) in WCH journey length.</p>
No Change	<p>Geology: no temporary or permanent loss/ disturbance of characteristics features or elements.</p> <p>Soils: no loss/ reduction of soil function(s) that restrict current or approved future use.</p> <p>Contamination:</p> <ol style="list-style-type: none"> 1. Human health: reported contaminant concentrations below background levels; 2. Surface water; use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and 3. Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a). <p>No loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction.</p>

Table 2: Receptor Sensitivity

Receptor value (sensitivity)	Description
Very high	<p>Geology: very rare and of international importance with no potential for replacement (e.g. UNESCO World Heritage Sites, UNESCO Global Geoparks, SSSI's and GCR where citations indicate features of international importance). Geology meeting international designation criteria which is not designated as such.</p> <p>Soils [and agricultural land]:</p> <ol style="list-style-type: none"> 1. Soils directly supporting an EU designated site (e.g. SAC, SPA, Ramsar); and / or 2. ALC grade 1 & 2 or LCA grade 1 & 2 [Isle of Man classes 1, 1/2 & 2]. <p>Contamination:</p> <ol style="list-style-type: none"> 1. Human health: very high sensitivity land use such as residential or allotments; 2. Surface water: relevant sensitivity criteria from Table 3.70 in "Road drainage and water environment LA 113" (National Highways, 2020a); and 3. Groundwater: use sensitivity criteria in "Road drainage and the water environment LA 113" (National Highways, 2020a). <p>Private property and housing:</p>

Receptor value (sensitivity)	Description
	<p>1.Existing private property or land allocated for housing located in a local authority area where the number of households are expected to increase by >25% by 2041 (ONS data); and/or</p> <p>2.Existing housing and land allocated for housing (e.g. strategic housing sites) covering >5ha and / or >150 houses.</p> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none"> 1.Complete severance between communities and their land/assets, with little/no accessibility provision; 2.Alternatives are only available outside the local planning authority area; 3.The level of use is very frequent (daily); and 4.The land and assets are used by the majority (>=50%) of the community. <p>Development land and businesses:</p> <ol style="list-style-type: none"> 1.Existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering >5ha. <p>WCH:</p> <ol style="list-style-type: none"> 1.National trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient WCH route. Little / no potential for substitution. 2.Routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs. 3.Rights of way for WCH crossing roads at grade with >16,000 vehicles per day.
High	<p>Geology: rare and of national importance with little potential for replacement (e.g. geological SSSI, ASSI, National Nature Reserves (NNR)). Geology meeting national designation criteria which is not designated as such.</p> <p>Soils [and agricultural land]:</p> <ol style="list-style-type: none"> 1.Soils directly supporting a UK designated site (e.g SSSI); and / or 2.ALC grade 3a, or LCA grade 3.1 [Isle of Man classes 2/3 and 3/2]. <p>Contamination:</p> <ol style="list-style-type: none"> 1.Human health: high sensitivity land use such as public open space; 2.Surface water: use sensitivity criteria in "Road drainage and water environment" LA 113 (National Highways, 2020a); and 3.Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a). <p>Private property and housing:</p> <ol style="list-style-type: none"> 1.Existing private property or land allocated for housing located in a local planning authority area where the number of households are expected to increase by 16-25% by 2041 (ONS data); and/or 2.Existing housing and land allocated for housing (e.g. strategic housing sites) covering >1-5ha and / or >30-150 houses. <p>Community land and assets where there is a combination of the following:</p>

Receptor value (sensitivity)	Description
	<p>1. There is substantial severance between community and assets, with limited accessibility provision;</p> <p>2. Alternative facilities are only available in the wider local planning authority area;</p> <p>3. The level of use is frequent (weekly); and</p> <p>4. The land and assets are used by the majority (>=50%) of the community.</p> <p>Development land and businesses:</p> <p>1. Existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering >1 - 5ha.</p> <p>WCH:</p> <p>1. Regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution; and/or</p> <p>2. Rights of way for WCH crossing roads at grade with >8,000 - 16,000 vehicles per day.</p>
Medium	<p>Geology: of regional importance with limited potential for replacement (e.g. RIGS). Geology meeting regional designation citation criteria which is not designated as such.</p> <p>Soils [and agricultural land]:</p> <p>1. Soils supporting non-statutory designated sites (e.g. Local Nature Reserves (LNR), LGS's, Sites of Nature Conservation Importance (SNCl's)); and / or</p> <p>2. ALC grade 3b or LCA grade 3.2 [Isle of Man class 3].</p> <p>Contamination:</p> <p>1. Human health: medium sensitivity land use such as commercial or industrial;</p> <p>2. Surface water: use relevant sensitivity criteria in Table 3.70 of "Road drainage and water environment LA 113" (National Highways, 2020a); and</p> <p>3. Groundwater: use relevant sensitivity criteria in Table 3.70 "Road drainage and water environment LA 113" (National Highways, 2020a).</p> <p>Private property and housing:</p> <p>1. Houses or land allocated for housing located in a local authority area where the number of households are expected to increase by >6-15% by 2041 (ONS data); and/or</p> <p>2. Existing housing and land allocated for housing (e.g. strategic housing sites) covering <1ha and / or <30 houses.</p> <p>Community land and assets where there is a combination of the following:</p> <p>1. There is severance between communities and their land/assets but with existing accessibility provision;</p> <p>2. Limited alternative facilities are available at a local level within adjacent communities;</p> <p>3. The level of use is reasonably frequent (monthly); and</p> <p>4. The land and assets are used by the majority (>=50%) of the community.</p> <p>Development land and businesses:</p> <p>1. Existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering <1ha.</p> <p>WCH:</p>

Receptor value (sensitivity)	Description
	<p>1. Public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer recreational journeys, and / or</p> <p>2. Rights of way for WCH crossing roads at grade with >4000 – 8000 vehicles per day.</p>
Low	<p>Geology: of local importance / interest with potential for replacement (e.g. non designated geological exposures, former quarry's / mining sites).</p> <p>Soils [and agricultural land]:</p> <p>1.ALC grade 4 & 5 or LCA grade 4.1 to 7 [Isle of Man classes 4 & 5]; and / or</p> <p>2.Soils supporting non-designated notable or priority habitats.</p> <p>Contamination:</p> <p>1.Human health: low sensitivity land use such as highways and rail;</p> <p>2.Surface water: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and</p> <p>3.Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a).</p> <p>Private property and housing:</p> <p>1.Proposed development on unallocated sites providing housing with planning permission/in the planning process.</p> <p>Community land and assets where there is a combination of the following:</p> <p>1.Limited existing severance between community and assets, with existing full Disability Discrimination Act (DDA) DDA 1995 (Environment Agency, 2020) compliant accessibility provision;</p> <p>2.Alternative facilities are available at a local level within the wider community;</p> <p>3.The level of use is infrequent (monthly or less frequent); and</p> <p>4.The land and assets are used by the minority (>=50%) of the community.</p> <p>Development land and businesses:</p> <p>1.Proposed development on unallocated sites providing employment with planning permission/in the planning process.</p> <p>WCH:</p> <p>1.Routes which have fallen into disuse through past severance or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes, and/or</p> <p>2.Rights of way for WCH crossing roads at grade with <4000 vehicles per day.</p>
Negligible	<p>Geology: no geological exposures, little / no local interest.</p> <p>Soils [and agricultural land]: previously developed land formerly in 'hard uses' with little potential to return to agriculture.</p> <p>Contamination:</p> <p>1. human health: undeveloped surplus land / no sensitive land use proposed;</p> <p>2. Surface water: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a); and</p>

Receptor value (sensitivity)	Description
	<p>3. Groundwater: use sensitivity criteria in "Road drainage and water environment LA 113" (National Highways, 2020a).</p> <p>Community land and assets where there is a combination of the following:</p> <ol style="list-style-type: none">1. No or limited severance or accessibility issues;2. Alternative facilities are available within the same community;3. The level of use is very infrequent (a few occasions yearly); and4. The land and assets are used by the minority ($\geq 50\%$) of the community. <p>Development land and businesses, Private property and housing, and WCH:</p> <p>N/A</p>



Moor Vannin Offshore Wind Farm

Annex 32.A - Transboundary Protected Sites Assessment Screening

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1 Annex 32.A: Transboundary Protected Sites Assessment (PSA) Screening

1.1 Introduction

- 1.1.1.1 This Annex provides a Screening assessment for transboundary sites as part of Chapter 32, Protected Sites Assessment (PSA) Strategy, which forms part of the Scoping Report. Whereas the Chapter 32, PSA Screening considers protected sites within the Isle of Man jurisdiction, this Annex considers all protected wildlife sites outside of the Isle of Man jurisdiction which are within the Zone of Influence (Zol) which is defined in section 1.4. This document should not be confused with Annex 5.D, Transboundary Screening, which outlines the approach to assessment of transboundary effects in Environmental Impact Assessment (EIA) terms.
- 1.1.1.2 The Isle of Man is a signatory to six international wildlife and conservation related conventions (as detailed in section 1.1.2). The PSA therefore needs to include consideration and assessment of protected sites beyond the Isle of Man's Territorial Seas. This Annex provides a transboundary screening assessment for such sites and is informed by identification of relevant features/ species, as well as consideration of their seasonality and origin (site screening). This will then be followed by an in-depth assessment which will be completed prior to consent application, including apportioning any residual adverse effects to designated sites and the application of any further mitigation deemed necessary.
- 1.1.1.3 The intention of this document is that it will be provided to transboundary consultees, including the relevant Statutory Nature Conservation Bodies (SNCBs) within the relevant neighbouring jurisdictions to the Isle of Man, to enable them to provide meaningful comment in any response to transboundary consultation initiated by the Isle of Man Government. These will principally be the SNCBs for England, Wales, Scotland, Northern Ireland and the Eire.
- 1.1.1.4 For the purposes of this document the terms Wildlife Sites, European Sites, and Designated Sites are used throughout. Wildlife sites are protected sites located within the jurisdiction of the Isle of Man and have been assessed in the PSA Strategy exercise. European sites are those sites that are designated under the Habitat's Directive which include Special Areas of Conservation (SACs), Special Protected Areas (SPAs) and Ramsar sites. The umbrella term 'designated sites' is used within this report to encompass all three types of European sites along with Marine Conservation Zones (MCZs) which have also been included within this report.

1.1.2 Structure of Document

- 1.1.2.1 This document is set out in a number of sections to present the process in a clear and understandable manner. The overall structure of the document is presented below:
- Section 1.1: Introduction. A background of to the project, including the purpose of the project;
 - Section 1.2: Legislative Context. An overview of the key pieces of legislation along with legislative context for Habitats Regulations Assessment (HRA) and the inclusion of MCZs within this report;
 - Section 1.3: Screening Consultation. Details of consultation that has taken place to date or is planned to take place;
 - Section 1.4: Methodology. A description of the methodology utilised to undertake the screening exercise;

- Section 1.5: Description of Development. Drawing on the information presented in the Project Description, providing a brief description of the proposed development;
- Section 1.6: Screening For Appropriate Assessment and MCZ assessment – alone and in-combination. Findings of the screening exercise both alone and in-combination along with details of how sites are identified and Likely Significant Effect (LSE) is determined; and
- Section 1.7: Summary of the Appropriate Assessment (AA) and MCZ Screening Assessment. A summary of the screening conclusions.

1.2 Legislative Context

- 1.2.1.1 As the Isle of Man is a Crown Dependency and not within the European Union (EU) or UK, AA is not required to consent the Proposed Development. However as noted above, through its commitment to international conventions, there is a requirement for the Isle of Man Government to give due consideration to impacts beyond its Territorial Seas. This report has therefore been produced in support of the PSA specifically in relation to transboundary sites. It has been produced following the Habitats Regulations Assessment (HRA) process, which is applicable to those sites, and is familiar to the SNCBs for those sites outside the Isle of Man.
- 1.2.1.2 MPAs have been considered for Scotland and Northern Ireland, however only two MCZs have been included within this report as there was no connectivity to any other sites aside from these sites and the European sites included within this report. Therefore, all other MPAs have been screened out and not included within this report.

1.2.2 Habitats Regulations Assessment (HRA)

- 1.2.2.1 As outlined in section 1.4, the PSA screening stage is akin to the HRA Screening stage, which stems from legislation set by European Union (EU) member states under the Habitats and Birds Directives (Council Directive 92/43/EEC and Directive 2009/147/EC). These EU Directives are implemented through the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations (as amended)) and Offshore Marine Habitats and Species Regulations 2017 (the Offshore Habitats Regulations (as amended)) in the UK.
- 1.2.2.2 In the HRA process an initial ‘screening’ stage determines the potential for a LSE through determining firstly whether there is a pathway for an effect and, if so, whether a significant effect is likely to occur as a result. This assessment is made in terms of effects from the Proposed Development alone and/or in-combination with other plans or projects.

1.2.3 Marine Conservation Zone (MCZ) Assessment

- 1.2.3.1 This Annex also considers the potential for impacts to MCZs, which are designated primarily for seabed habitats in the UK under the Marine and Coastal Access Act (MCAA) 2009. This Act places a duty on the Marine Management Organisation (MMO) to consider the potential impacts on designated MCZs in English waters where developments or activities may affect them. MCZs are not considered European sites under the Habitat’s Directive, however they have been considered within this assessment due to the proximity of MCZs to the Proposed Development.
- 1.2.3.2 The MCZ Assessment process is similar to the HRA process, involving an initial screening stage, to identify:
- Whether the activity is taking place within or near an area being put forward as an MCZ or already designated as an MCZ; and

- Whether the activity is capable of affecting (other than insignificantly) either (i) the protected features of an MCZ; or (ii) any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent.

1.2.3.3 If that screening threshold is met, subsequent assessment is then made to determine whether the Proposed Development would hinder the ability of an MCZ to meet its conservation objectives.

1.3 Screening Consultation

1.3.1.1 To date no engagement or consultation has been held with any stakeholders in relation to this transboundary site screening exercise. SNCBs from relevant countries (e.g. Natural England and Natural Resources Wales) will be provided this document for the purposes of transboundary consultation as part of the process of seeking a Scoping Opinion from the Department of Infrastructure (DoI). To date, the Applicant has undertaken limited consultation with any transboundary SNCBs, however project introduction meetings have been held with Natural England in relation to the early phases of the project development.

1.3.1.2 Following the receipt of a Scoping Opinion, the Applicant will engage with transboundary SNCBs as required.

1.4 Methodology

1.4.1.1 As illustrated in Figure 1.1, the PSA process will begin with a screening exercise whereby protected sites will be considered and 'screened in' (or out) based on the likelihood of a significant impact to occur through interactions with the Proposed Development alone or in-combination with other plans or projects.



Figure 1.1: Moir Vannin PSA Process.

1.4.2 Approach to Screening

1.4.2.1 The applicable test for the screening stage for HRA was documented within the decision for Waddenzee (C-127/02 – Paragraph 3a):

"In the light of the precautionary principle, a risk of significant effects exists if it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the conservation objectives of the site concerned; in case of doubt as to the absence of significant effects an appropriate assessment must be carried out. All aspects of the plan or project which can, either individually or in-combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field."

1.4.2.2 The screening stage has been characterised by the European Commission Guidance (2001, 2018) as follows; 'Assessment of plans and projects significantly affecting European sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' ('the European Commission Guidance') as a four-step process. These steps are:

1. Determining whether the Proposed Development or plan is directly connected with or necessary to the management of any European or designated site(s);
2. Describing the Proposed Development and the description and characterisation of other projects or plans that in-combination have the potential for having significant effects on a European or designated site(s);
3. Identifying the potential effects on a European or designated site(s); and
4. Assessing the significance of any effects on a European or designated site(s).

1.4.2.3 When each of these steps has been worked through there are three potential outcomes:

- The Proposed Development is directly connected with or necessary to the management of a European designated site(s) and therefore does not require further assessment;
- One or more LSE on designated features of European or designated sites are identified and the Proposed Development requires further assessment; and
- No LSEs on designated features of European or designated sites are identified as there is no pathway by which such effects could occur, or they can be excluded on the basis of objective information and therefore there is no requirement for further assessment.

1.4.2.4 In order to determine whether the Proposed Development is capable of resulting in one or more LSEs on a European or designated site(s) it is necessary to understand the activities associated with the installation, operation and maintenance, and decommissioning of the Proposed Development (e.g. the positioning of external cable protection), the potential changes that may occur in the environment as a result (e.g. the production of installation noise), and the effects that this may have on designated features of European or designated sites (e.g. disturbance of marine mammals resulting in increased energy expenditure and reduced energy intake resulting in potential lower survival and productivity rates).

1.4.2.5 Through the use of this 'activity – change – effect' concept, it is possible to identify European and other designated sites (and their qualifying features) that may be subject to LSEs through the determination of the Zol for each receptor. These Zol can

then be extended to identify the other plans and projects that require consideration within the assessment of in-combination effects.

1.4.3 Methodology Used to Identify European and other Designated Sites with Potential to be Affected by the Proposed Development

- 1.4.3.1 The proposed approach was developed with reference to EC guidance (e.g. EC, 2018), also, Advice Note 10 (Planning Inspectorate, 2017), including its checklist of the information required to support HRA Screening for NSIPs (Planning Inspectorate, 2017).
- 1.4.3.2 Screening is a relatively coarse filter to identify those designated sites and qualifying features with connectivity to the Proposed Development for which LSE cannot be discounted. In order to screen for LSE, it is necessary to consider three hierarchical aspects:
- Connectivity;
 - Route to impact; and
 - Non-insignificant abundance.
- 1.4.3.3 Connectivity is defined as the presence of the qualifying feature of a designated site in the Zol of a project (as defined for each receptor is defined in Section 1.6). So, if a qualifying feature has no connectivity to the Proposed Development, it leads to the conclusion of no LSE. Where connectivity cannot be objectively ruled out for any one qualifying feature, it is necessary to conclude that LSE cannot be excluded on the grounds of connectivity.
- 1.4.3.4 The next stage of the LSE consideration process is to consider potential for an effects pathway (be it direct or indirect). Where connectivity has been identified, but it is determined that there is no route to impact on the qualifying feature (source-pathway-receptor (s-p-r) approach, further described below), then it may still be possible to objectively conclude no LSE. If, however, an effects pathway exists then a conclusion of LSE cannot be ruled out at this stage. Site-specific screening criteria are identified that assist with this part of the appraisal (section 1.4.2).
- 1.4.3.5 Finally, if (following confirmation of potential for connectivity and route to impact) the abundance of a qualifying feature within the Zol is deemed non-significant, it may be argued that no LSE can be concluded, as the Conservation Objectives (COs) of the site will not be compromised. The classification of non-significant abundance is considered on a case-by-case basis and will vary between features, based on their habitat extent or population size.
- 1.4.3.6 Following the above process, for each European and non-European designated site (and their qualifying features) considered within the PSA screening it will be concluded that either:
- There are no LSEs on the protected site(s) and their qualifying features, so therefore no further assessment is required; or
 - LSEs on the protected site(s) and their qualifying features cannot be discounted and therefore further assessment is necessary.
- 1.4.3.7 Given the comparatively high-level nature of screening a precautionary approach will be applied and so where any doubt as to the potential for LSE exists then the feature has been screened into the subsequent stage of the HRA process.

MZC Screening

- 1.4.3.8 Although MCZs are not designated as European sites, a similar methodology will be used for these sites for the purposes of this transboundary PSA screening. Screening of MCZs has been considered taking into account the relevant guidance for MCZ assessments (MMO 2013). Any MCZs screened-in will be subject to assessment with respect to this guidance and in accordance with requirements under the Marine and Coastal Access Act (MCAA) 2009.
- 1.4.3.9 The methodology used for assessing the MCZs is laid out in section 1.4.5.

Zone of Influence

- 1.4.3.10 For many types of development, it is relatively simple to define the Zol because the projects are geographically discrete, and the number of receptors and types of impact are low. Generally, a single search (typically distance) parameter can be applied to determine the extent of a project's effects.
- 1.4.3.11 For offshore wind developments, however, numerous effect-pathways can arise due to species mobility. These pathways are complex and potentially distributed across a substantial spatial scale.
- 1.4.3.12 The method to identify the Zol must be appropriate for offshore wind developments and include the consideration of European sites for highly-mobile species in this context. It is fundamental that the method is able to define all components of the Zol, these being:
- The area over which direct effects could occur;
 - The area surrounding the footprint of the Proposed Development where indirect effects could occur; and
 - The area beyond the direct and indirect Zol that captures remote sites where species distribution and natural ranges provide connectivity with potentially affected sites and features.
- 1.4.3.13 Therefore, following the descriptions above, different Zol ranges have been identified for each receptor group and are presented in Table 1.1.

Table 1.1: Receptor ranges applied to identify European sites for designated features consideration at screening.

Receptor		Range applied from Proposed Development	Source/ reference
Benthic receptors		20 km	A precautionary range of 20km was applied as the distance threshold for effects, based on the maximum potential range for any impacts caused by the proposed development on sites with benthic subtidal and intertidal ecology features (Arup, 2023). This is based on the impact with the largest zone of influence which is considered to be increased suspended sediment concentrations and deposition. A precautionary 20 km range is applied in the absence of site-specific physical process assessment information.
Marine Mammal receptors	Harbour porpoise	Celtic and Irish Seas Management Unit (MU ¹) for harbour porpoise	Inter-Agency Marine Mammal Working Group (IAMMWG), 2015
	Bottlenose dolphin	Irish Sea MU for bottlenose dolphin	IAMMWG, 2015
	Harbour seal	120 km + any sites with evidence of connectivity (Vincent <i>et al.</i> , 2017)	Known foraging range applied on other Offshore Wind Farm (OWF) projects based upon Carter <i>et al.</i> , 2022
	Grey seal	145 km + any sites with evidence of connectivity (Vincent <i>et al.</i> , 2017)	Thompson, Mcconnell, Tollit Mackay, Hunter, Racey. (1996). Comparative Distribution, Movements and Diet of Harbour and Grey Seals from Moray Firth, N. E. Scotland.
Migratory fish species		100 km (marine environment only)	Reasonable objective range for the identification of risks to migratory fish with reference to the location of designated estuaries
Ornithological receptors		Breeding bio-season: Mean maximum foraging range (MMF) plus one standard deviation (SD) for breeding seabirds (see Table 1.2). Non-breeding bio-seasons: Biogeographic Biologically Defined Minimum Population Scales (BDMPS) population for Irish Sea and UK western waters.	Mean-maximum foraging ranges during the breeding season, based on seabird tracking data, are used to highlight potential connectivity between breeding colonies and offshore wind farms and, therefore, the potential for any negative population-level effects. The use of foraging ranges presented in Woodward <i>et</i>

¹ Management Unit (MU) typically refers to a geographical area in which the animals of a particular species are found to which management of human activities is applied (IAMMWG, 2022).

Receptor	Range applied from Proposed Development	Source/ reference
	Migratory waterbirds and seabirds within 100 km of the Offshore Array and Cable Search Area.	<p><i>al.</i> (2019) are currently considered the most robust and representative of UK and Irish populations. This method, which captures sites within MMF+1SD, as shown in Figure 1.2, has been presented to National Parks Wildlife Services (NPWS) and is consistent with the approach taken for UK offshore wind projects.</p> <p>Tracking data referred to for gannet and Manx shearwater referenced for certain sites below was obtained from Wakefield <i>et al.</i>, (2013) and Dean <i>et al.</i>, (2015), respectively.</p>
	<i>Criteria and Definition²</i>	<i>Relevant distance/ range to determine connectivity with qualifying features</i>
	Criterion 1A: National Site Network/ Designated Sites which have physical overlap with array areas and cable search area.	Overlap between designated site and Offshore Array and cable search area.
	Criterion 1B: National Site Network/ Designated Sites which have physical overlap with the Offshore Array and Cable Search Area.	Overlap between designated site and Offshore Array and cable search area.
	<p>Criterion 2: National Site Network/ Designated Sites that occur within a defined range of effect (in this case MMF+1SD of Isle of Man).</p> <p>This Criterion only identifies sites with seabird receptors that are interest features in the breeding season since it is only at that part of the year that a numeric range can be stated based on foraging distances from the designated site. Consequently, only breeding features of relevant SPAs/ Ramsar Sites are assessed for Criterion 2).</p>	MMF+1SD, Woodward <i>et al.</i> , (2019) provides the most up-to-date collation of seabird foraging ranges based on multiple individuals from numerous study colonies. Table 1.2 provides an overview of Woodward <i>et al.</i> , (2019) foraging ranges.

² The criteria used was defined from the advice provided in the guidance notes brought out by NatureScot (2023a & b) and the best practice advice from Natural England (Parker *et al.*, 2022).

Receptor	Range applied from Proposed Development	Source/ reference
	Criterion 3: National Site Network/ European SPAs Sites which occur within range of the maximum expected extent of displacement/ disturbance due to Project activities.	Intertidal: 0.5 km Sea ducks: 4 km Divers: 10 km (Ranges based on advice from UK Statutory Nature Conservation Bodies (SNCBs), 2022 and recent discussion (relevant to red-throated diver)).
	Criterion 4: Designated sites for breeding interest features that might pass through the Offshore Array on migration or in winter. Relevant breeding SPAs for each species from colonies located along the eastern seaboard of Ireland and west coast of the UK. These SPAs have been carried forward to the determination of LSE stage.	All SPAs with migratory features within 100 km have been considered. Features from designated sites on the eastern seaboard of Ireland or in the UK to the north of the Offshore Array were also considered.

Table 1.2. Mean-max foraging range, standard deviation, and mean-max foraging range +1SD of UK breeding seabird species (Woodward et al., 2019).

Species	Mean-max foraging range (km)	Standard deviation (SD) (km)	Mean-max + 1SD (km)
Common eider	21.5	-	21.5
Kittiwake	156.1	144.5	300.6
Black-headed gull	18.5	-	18.5
Mediterranean gull	20.0	-	20.0
Common gull	50.0	-	50.0
Great black-backed gull	73.0	-	73.0
Herring gull	58.8	26.8	85.6
Lesser black-backed gull	127.0	109.0	236.0
Sandwich tern	34.3	23.2	57.5
Little tern	5.0	-	5.0
Roseate tern	12.6	10.6	23.2
Common tern	18.0	8.9	26.9
Arctic tern	25.7	14.8	40.5

Species	Mean-max foraging range (km)	Standard deviation (SD) (km)	Mean-max + 1SD (km)
Great skua	443.3	487.9	931.2
Common guillemot	73.2	80.5	153.7
Razorbill	88.7	75.9	164.6
Atlantic puffin	137.1	128.3	265.4
Red-throated diver	9.0	-	9.0
European storm petrel	336.0	-	336.0
Northern fulmar	542.3	657.9	1200.2
Manx shearwater	1346.8	1018.7	2365.5
Northern gannet	315.2	194.2	509.4
Great cormorant	25.6	8.3	33.9
European shag	13.2	10.5	23.7

Source – Pathway – Receptor (S-P-R) Approach

- 1.4.3.14 The s-p-r approach is the standard conceptual model that is used across a number of European Directives to characterise the means (pathways) via which effect-sources (such as the works being proposed) could be experienced by receptors (sensitive Qualifying Interest (QI) of a European site). Only where there is an identifiable source, a pathway and a sensitive receptor, is there likely to be a significant effect. The s-p-r framework refers to its three comprising elements that must all be present to identify a potential effect-pathway.
- 1.4.3.15 The Zol is defined by the guidance (DCCAE, 2017) as the potential geographic area that could be affected by the implementation of the Proposed Development with the boundaries determined having regard to the source-pathway-target risk assessment concept. The most direct extent of the Zol is within the 'footprint' of an effect where exposure might provide a direct pathway to a receptor. S-p-r relationships are not always linear, and effects might be transmitted beyond the 'footprint' e.g. via hydrological pathways or enabled by impacts on another receptor (indirect effects). Notwithstanding this, how an effect might progress from its source along pathways to a particular European site can easily be discerned with reference to the receiving environment. Consideration of supporting habitat (defined as areas that can be used by a species, in particular those which may be listed as a feature of a designated site, to support that species survival and/ or reproduction) is also important here.
- 1.4.3.16 Mobile species are also of consideration, and the pathways will change between mobile receptor type. The primary mobile receptors of concern are marine mammals, migrating fish and ornithological receptors. Due to the large area/ range covered by some of these receptors and the large scale of the proposed works, there is a risk of mobile species moving into/ through the site or being excluded from the area. The application of the precautionary principle means that the nature of these receptors often leads to precautionarily large Zols and pathways to cover this potential risk.

1.4.4 Methodology used to identify and assess in-combination effects

- 1.4.4.1 With respect to in-combination effects, this Annex identifies the categories of plans and projects that will need to be considered and provides an initial highly precautionary in-combination assessment on that basis.
- 1.4.4.2 It is recognised that consultee feedback will be required to identify specific projects for inclusion in the in-combination assessment.
- 1.4.4.3 As established within section 1.1.2, this transboundary screening exercise is akin to the HRA Screening stage used for UK projects. Within the HRA process there is a requirement for the Competent Authority to carry out the AA for a project alone and in-combination with other reasonably foreseeable plans or projects, where these are not directly connected with or necessary to the management of the site.
- 1.4.4.4 For the identification of other plans and projects it is considered that the other major developments which should be taken into consideration in the in-combination assessment include those which are:
- Projects currently under construction;
 - Operational projects (only if there is an intermittent unquantified effect that was not captured in the baseline);
 - Those projects that are only partially constructed at the time that baseline characterisation is undertaken;

- Those projects that were only recently completed, during the development of the baseline characterisation, the full extent of the impacts arising from the development(s) may not be reflected in the baseline;
- Those plans and projects which may have consent or licences to undertake further work, such as maintenance dredging or notable maintenance works which may arise in additional effects;
- Permitted application(s), but not yet implemented;
- Submitted application(s), but not yet determined;
- Survey or site investigation activities which require licences or other consents;
- Projects on the National Marine Planning website for Scotland (Scottish Government, 2023) including those at pre-application stage where adequate information is available;
- Projects identified in the relevant development plan (Offshore Renewable Energy Development Plan II (Department of the Environment, Climate and Communications, 2022)) (and emerging development plans - with appropriate weight given as they move closer to adoption) recognising that much information on any relevant proposals will be limited; and
- Projects identified in other plans and programmes (National Marine Planning Framework (Department of Housing, Local Government and Heritage, 2018)) (as appropriate) which set the framework for future development consents/ approvals, where such development is reasonably likely to come forward.

1.4.4.5 A longlist of reasonably foreseeable proposals will be identified and will be reduced to a shortlist for assessment based on whether there is a spatial or temporal overlap between the potential effects of the projects, as well as incorporating an assessment of confidence in the publicly available information at the time.

1.4.4.6 For in-combination screening, the following principles apply:

- There is a presumption that where a potential for LSE has been identified for the Proposed Development alone, then potential LSE in-combination also applies;
- Taking a precautionary approach, sites where no LSE was identified alone but a pathway for effect remained were also screened through to assessment for in-combination consideration; however
- For sites where no LSE was identified alone based on a lack of pathway (i.e. no contribution from the project to any effect), no LSE in-combination could also be concluded, and these sites were not screened through to assessment.

1.4.5 MCZ Screening Methodology

1.4.5.1 MCZ screening is completed to determine if Section 126 of the Marine and Coastal Access Act (MCAA) (2009) should apply to the application. This will apply if:

- The licensable activity is taking place within or near an area designated as an MCZ; and
- The activity is capable of affecting (other than insignificantly) either:
 1. The protected features of the MCZ; or

2. The ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent.

- 1.4.5.2 In determining 'insignificance', the guidance notes that 'the public authority will consider the likelihood of an activity causing an effect, the magnitude of the effect should it occur, and the potential risk any such effect may cause on either the protected features of an MCZ or any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependant.' (MMO, 2013).
- 1.4.5.3 As part of this process, where an MCZ feature was not present at or in the vicinity of the Proposed Development and a pathway to effect was not present, it was screened out from further assessment.

1.5 Description of development

- 1.5.1.1 The offshore elements of the Proposed Development are located off the coast of the Isle of Man and the Offshore Array covers an area of 253 km². Maughold Head is the closest location onshore at a distance of approximately 11 km.
- 1.5.1.2 The Proposed Development will consist of a maximum of 100 wind turbine generators (WTGs) and a combination of offshore infrastructure and onshore infrastructure, along with other supporting infrastructure and ancillary works.
- 1.5.1.3 A detailed description of the proposed works is provided in Chapter 3, Project Description.

1.6 Screening for Appropriate Assessment – alone and in-combination

1.6.1 Introduction

- 1.6.1.1 This section considers the potential for significant effects using the s-p-r model. Following the description of the receiving environment, sites and features with a connectivity and potential effects will be identified along with the determination of LSE both alone and in-combination.

1.6.2 Identification of sites and features with connectivity and potential effects

- 1.6.2.1 Based on the Proposed Development description set out in Chapter 3, Project Description, the potential effects from the construction, operation, maintenance and decommissioning of the project have been identified in this Annex.
- 1.6.2.2 The pathways associated with the potential effects vary depending on the receptor. Direct pathways include any potential ways for effects from the proposed works to physically impact a site or feature. These pathways include having a close proximity with/ direct overlap between the Proposed Development and the site and being within the maximum tidal extent range from the Proposed Development. Indirect pathways are those that will not physically interact with a site or feature but will impact them nonetheless, for example impacts on prey resources. For mobile receptor groups such as offshore and intertidal ornithology, the pathways that inform the Zol (as defined in section 1.4.3) will capture remote sites where species distribution/ ranges provide connectivity. Theoretical connectivity to potential sites for mobile species that use or traverse the Zol are typically defined by relevant foraging ranges, distribution or migratory corridors.
- 1.6.2.3 The potential effects, pathways, and activities potentially resulting in effects are presented in Table 1.3. The list of potential effects and pathways is partly based on

the NE Advice on Operations³ and additionally based on the industry standard list of effects and pathways used for offshore wind farm HRA screening.

1.6.2.4 For offshore and intertidal ornithology, as reflected in Table 1.3, the following effects were screened out and are not considered further in this assessment as there is no impact pathway between the Proposed Development and the following effects.

- Temporary habitat loss;
- Temporary disturbance/damage to habitats;
- Habitat fragmentation or severance;
- Visual / noise disturbance;
- Invasive non-native species; and
- Accidental release of contaminants.

1.6.2.5 Considering the effects on habitats, the main effects on birds are expected to be effects resulting from displacement, and indirect effects on prey availability. With these impacts already screened in, any additional impacts are not considered relevant to the assessment.

1.6.2.6 For invasive non-native species, there is not considered to be a risk to ornithological receptors. Main impacts to birds resulting from invasive species arise from mammalian predators (e.g. rats present on islands that were previously rat free). During the construction and operation of the Proposed Development, there is not considered to be a risk of introduction of mammalian predators, with any risk accounted for within the mitigation plan. Similarly, any risk to ornithological receptors resulting from the accidental release of contaminants is expected to be both unlikely and accounted for within the accidental spills plan.

³ <https://designatedsites.naturalengland.org.uk/>

Table 1.3. Potential effects and impacts associated with the considered receptor groups.

APotential Effect	Pathways	Activities potentially resulting in effect		
		Construction	Operation and Maintenance	Decommissioning
<i>Subtidal and Intertidal Benthic Ecology</i>				
Physical habitat loss/ disturbance	Direct physical interaction between the development and the proposed site (direct)	Installation of structures; Seabed preparation; Seabed dredging; Sediment disposal; Vessel movements/ anchoring; and All in-combination activities	Physical presence of structures; Maintenance of structures; Presence of scour or cable protection; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Suspended sediment/ deposition	Effect travelling through the water column to reach the site/ feature (direct)	Installation of structures; Seabed preparation; Seabed dredging and sandwave clearance; Sediment disposal; Installation of scour or cable protection; and All in-combination activities	Maintenance of structures; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Accidental pollution	Effect travelling through the water column to reach the site/ feature (direct)	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition above); and All in-combination activities		Anticipated to be less than during construction
Invasive Non-Native Species (INNS)	Presence of the works/ structures allowing non-native species to travel between sites and features (indirect)	Vessel movements on and off site; Installation of solid structures; and All in-combination activities	Vessel movements on and off site; Maintenance Activities; Physical presence of structures; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Electromagnetic frequencies (EMF)	Direct emissions from the works into the environment to impact the sites and features (direct)	N/A	Generation of EMF from installed cables	N/A
Changes to physical processes	Effects on sites and features from changes to water movements and transitional rates (indirect)	Physical presence of structures; Installation of cable and scour protection (where required)	Physical presence of structures	Anticipated to be the removal of infrastructure in the reverse order of construction.
In-combination	Various (see above)	In-combination activities	In-combination activities	In-combination activities
<i>Marine Mammals</i>				
Underwater Noise	Effect travelling through the water column to reach the site/ feature (direct)	Piling; Unexploded Ordnance (UXO); Construction vessel noise; Other construction activities; Acoustic/ geophysical surveys; Acoustic Deterrent Devices (ADD); and All in-combination activities	Acoustic/ geophysical surveys; Vessel noise; Operational noise; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Vessel Disturbance	Effect is a result of vessel movement within the area and can potentially impact connected sites and features (direct)	Construction vessel movements; Survey vessel movements; and All in-combination activities	Maintenance vessel movements; Survey vessel movements; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Collision Risk	Effect is a result of vessel movement within the area and can potentially impact connected sites and features (direct)	Vessel collision risk; and All in-combination activities		Anticipated to be the removal of infrastructure in the reverse order of construction.

APotential Effect	Pathways	Activities potentially resulting in effect		
Accidental pollution	Effect travelling through the water column to reach the site/ feature (direct)	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition); and All in-combination activities		Anticipated to be the removal of infrastructure in the reverse order of construction.
Changes to prey	Effects site/ feature by impacting lower trophic level organisms (indirect)	Generation of underwater noise from construction/ maintenance activities; Loss of supporting habitats (via all activities listed for physical habitat loss/ disturbance in subtidal and intertidal benthic ecology); Vessel movements; EMF; and All in-combination activities		Anticipated to be the removal of infrastructure in the reverse order of construction.
Habitat loss	Effects impacting habitat caused by development works (direct and indirect)	Removal of supporting habitat during installation of structures; and All in-combination activities	Prey habitat loss in footprint of structures/cable protection; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Disturbance at haul out locations (non-physical disturbance)	Effect is a result of vessel movement within the area and can potentially impact connected sites and features (direct)	Vessel movements; and All in-combination activities		Anticipated to be the removal of infrastructure in the reverse order of construction.
In-combination	Various (see above)	In-combination activities		In-combination activities
<i>Intertidal and Offshore Ornithology Receptors</i>				
Direct disturbance and displacement	Effect is a result of physical structures present within the movement/ migratory zones for features (direct)	Construction activity; and Vessel movements	Operation and maintenance activity; Physical presence of turbines; and Vessel movements	Anticipated to be the removal of infrastructure in the reverse order of construction.
Collision risk	Effect is a result of physical structures present within the movement/ migratory zones for features (direct)	N/A	Physical presence of turbines	N/A
Barrier effects	Effect is a result of physical structures present within the movement/ migratory zones for features (direct)	N/A	Physical presence of turbines	N/A
Indirect effects	Various	Effects on habitats; and Changes in prey species availability and behaviour	Effects on habitats; and Changes in prey species availability and behaviour	Effects on habitats; and Changes in prey species availability and behaviour
In-combination	Various (see above)	In-combination activities		In-combination activities
<i>Migratory Fish</i>				
Underwater Noise	Effect travelling through the water column to reach the site/ feature (direct)	Piling; UXO; Construction vessel noise; Other construction activities; Acoustic/ geophysical surveys; ADD; and All in-combination activities	Acoustic/ geophysical surveys; Vessel noise; Operational noise; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
Suspended Sediment/ deposition	Effect travelling through the water column to reach the site/ feature (direct)	Installation of structures (e.g. piling); Seabed preparation; Seabed dredging and sandwave clearance; Sediment disposal; Cable installation; and All in-combination activities	Maintenance of structures; and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.

APotential Effect	Pathways	Activities potentially resulting in effect	
Accidental Pollution	Effect travelling through the water column to reach the site/ feature (direct)	Release of contaminants; Release of sediment (via all activities listed for suspended sediment/ deposition); and All in-combination activities	Anticipated to be the removal of infrastructure in the reverse order of construction.
EMF	Presence of the works/ structures allowing species to travel between sites and features (indirect)	N/A	Generation of EMF from installed cables N/A
INNS	Direct emissions from the works into the environment to impact the sites and features (direct)	Vessel movements on and off site; Installation of solid structures; and All in-combination activities	Vessel movements on and off site; Maintenance activities; Presence of solid structures; and All in-combination activities Anticipated to be the removal of infrastructure in the reverse order of construction.
Physical habitat loss/ disturbance	Effects impacting habitat caused by development works (direct and indirect)	Installation of structures; Seabed preparation; Seabed dredging; Sediment disposal; Vessel movements/ anchoring; and All in-combination activities	Maintenance of structures; and All in-combination activities Anticipated to be the removal of infrastructure in the reverse order of construction.
Changes to prey	Effects site/ feature by impacting lower trophic level organisms (indirect)	Generation of underwater noise from construction/ maintenance activities; Loss of supporting habitats (via all activities listed for physical habitat loss/ disturbance in Subtidal and Intertidal Benthic Ecology); Vessel movements; EMF; and All in-combination activities Anticipated to be less than during construction	

1.6.3 Determination of LSE for SPAs

- 1.6.3.1 Initial site selection for offshore and intertidal ornithology identified all European Sites with designated ornithology features located within a range defined by the criteria outlined in Table 1.1. The Ornithology Screening Table (Table 1.6) considers all Irish and UK coastal SPAs and identifies those sites where a designated feature falls into the criteria outlined in Table 1.6. No sites were considered outside of the UK or Ireland due to distance and lack of connectivity. All SPAs beyond 300 km from the Proposed Development area were considered for seabirds but where there was no pathway or LSE for any designated features at these sites they were screened out, therefore only sites within this distance are presented in Table 1.6. The remaining sites and features for which a pathway may exist are presented in section 1.6.6 where they are screened in or out depending on potential for LSE. The resulting sites screened in section 1.6.6 are considered in-combination within Table 1.6 below.
- 1.6.3.2 Criterion 2 focused on identifying potential connectivity between breeding seabird colonies at SPAs and Ramsar sites and the site of the Proposed Development. Foraging ranges presented in Woodward *et al.*, (2019) were used to identify those colonies within range of the Proposed Development.
- 1.6.3.3 The mean-maximum range was used from the Woodward *et al.*, (2019) review as it provides the average across the maximum foraging distance for each colony included within the study. This is therefore highly precautionary as it used the maximum range as a basis of the calculation for each species and, was deemed appropriate in identifying potential for LSE. Screening for Criterion 2 is based on birds travelling around major land masses as it is unlikely that birds would travel across land in order to forage offshore, thus screening out all east coast SPAs.
- 1.6.3.4 All non-breeding season impacts for seabirds at sites out with the maximum foraging range + 1SD were screened out for SPAs further than 300 km from the site of the Proposed Development. It was considered that there was no pathway or LSE for any designated features at these sites and therefore they are not included in Table 1.6 below.
- 1.6.3.5 For intertidal and migratory species, any impacts for features of SPAs out with 100 km of the Proposed Development were screened out as it was considered that any apportioned impacts for these more distant SPAs will be minimal and insufficient to result in LSE. This screening approach follows that adopted by Awel y Mor OWF, which concluded no LSE on all sites. Therefore, these sites are not included in Table 1.6.
- 1.6.3.6 Additionally, landlocked SPAs have been screened out due to the lack of connectivity with the Proposed Development and no pathway exists for the qualifying features. Leaving out the SPAs with no connectivity or pathways beyond the set distances outlined above helped to keep the assessment proportionate, concentrating on the most relevant sites.

1.6.4 Initial MCZ screening

- 1.6.4.1 Table 1.4 below indicates the protected features of the two MCZs that have been identified for inclusion within this screening exercise and provides the outcome of the pathway/receptor screening exercise.

Table 1.4. Table of MCZs and features identified for Intertidal and Subtidal Benthic Ecology receptors.

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Protected Features	Project Phase	Pressure	Potential exposure to pressure and mechanism of effect/impact if known	Screened in alone?	Screened in in-combination?
West of Copeland MCZ	0.0	11.5	<ul style="list-style-type: none"> • Subtidal sand • Subtidal coarse sediment • Subtidal mixed sediment 	Construction and decommissioning	<ul style="list-style-type: none"> • Suspended sediment / deposition • Accidental pollution • INNS; • Changes to physical processes only. 	The MCZ is within the proposed screening distance as described within section 1.4.3 and therefore has been considered for all impacts. Based on the distance from the site to the Proposed Development, out of the impacts identified within Table 1.3 this site (and associated features) are screened in for suspended sediment/ deposition, accidental pollution, INNS, and changes to physical processes only.	Yes	Yes - potential for effect/impact identified alone therefore screened in in-combination
West of Walney MCZ	19.98	24.36	<ul style="list-style-type: none"> • Subtidal sand • Subtidal mud • Sea-pen and burrowing megafauna communities 	Construction and decommissioning	<ul style="list-style-type: none"> • Suspended sediment / deposition • Accidental pollution • INNS; • Changes to physical processes only. 	The MCZ is within the proposed screening distance as described within section 1.4.3 and therefore has been considered for all impacts. Based on the distance from the site to the Proposed Development, out of the impacts identified within Table 1.3 this site (and associated features) are screened in for suspended sediment/ deposition, accidental pollution, INNS, and changes to physical processes only.	Yes	Yes - potential for effect/impact identified alone therefore screened in in-combination

1.6.5 Initial screening for LSE

- 1.6.5.1 Following the Zols identified (see section 1.4.2) and the above information describing the screening process, various sites were screened in for consideration. Table 1.5 resents the identified sites, their distance to the Proposed Development, associated designated features, potential effects which they are considered for and the rational used to screen them in at this stage.

Table 1.5. Sites and features identified for Migratory Fish receptors.

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in-combination?
Solway Firth SAC	58.65	71.38	<ul style="list-style-type: none"> • 1095 Sea lamprey (<i>Petromyzon marinus</i>) • 1099 River lamprey (<i>Lampetra fluviatilis</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	The distance between the Proposed Development and designated site combined with the low sensitivity of lamprey to underwater noise (Popper <i>et al.</i> , 2014) mean that there is no potential for LSE for these features at this site. Therefore, there is no connectivity between the designated site and the Proposed Development.	No	No - no potential for LSE alone and no pathway for effect
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Collision risk; • Changes to prey; and • Habitat loss/disturbance. 	These features have been screened out (no potential for LSE) from assessment as a result of the distance between the Proposed Development and the designated site. Therefore, there is no connectivity between the designated site and the Proposed Development.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	These features have been screened out (no potential for LSE) from assessment as a result of the distance between the Proposed Development and the designated site. Therefore, there is no connectivity between the designated site and the Proposed Development.		
Dee Estuary/ Aber Dyfrdwy SAC	96.25	96.25	<ul style="list-style-type: none"> • 1095 Sea lamprey (<i>Petromyzon marinus</i>) • 1099 River lamprey (<i>Lampetra fluviatilis</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	The distance between the Proposed Development and designated site combined with the low sensitivity of lamprey to underwater noise (Popper <i>et al.</i> , 2014) mean that there is no potential for LSE for these features at this site. Therefore, there is no connectivity between the designated site and the Proposed Development.	No	No - no potential for LSE alone and no pathway for effect
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Changes to prey; and • Habitat loss/disturbance 	These features have been screened out from assessment (no potential for LSE) as a result of the distance between the Proposed Development and the designated site. Therefore, there is no connectivity between the designated site and the Proposed Development.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	These features have been screened out from assessment (no potential for LSE) as a result of the distance between the Proposed Development and the designated site. Therefore, there is no connectivity between the designated site and the Proposed Development.		

Table 1.6. Table of sites and features identified for Ornithology receptors.

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Solway Firth SPA	30.15	30.15	<ul style="list-style-type: none"> • Common gull • Herring gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	These non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the Proposed Development and therefore, LSE cannot be discounted in relation to all effects alone.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> • Common gull • Cormorant 	Construction and decommissioning. Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, these features are not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone. However, they are screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
			<ul style="list-style-type: none"> • Barnacle goose • Bar-tailed godwit • Common scoter • Curlew • Dunlin • Golden plover • Goldeneye • Goosander • Grey plover • Knot • Lapwing • Oystercatcher • Pink-footed goose • Pintail 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> Redshank Red-throated diver Sanderling Scaup Shelduck Shoveler Teal Turnstone Whooper swan Ringed plover Black-headed gull 					
Liverpool Bay / Bae Lerpwl SPA	31.43	31.43	<ul style="list-style-type: none"> Common tern Little tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE alone and no pathway for effect
			<ul style="list-style-type: none"> Common scoter Red-throated diver 	Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement 	During the non-breeding season these features migrates and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be insufficient to result in LSE. They are therefore screened out during the non-breeding season. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Morecambe Bay and Duddon Estuary SPA	32.81	40.86	<ul style="list-style-type: none"> Common tern Little tern Black-headed gull 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE alone and no pathway for effect
			<ul style="list-style-type: none"> Herring gull Lesser black-backed gull Great black-backed gull Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> Arctic tern 	Construction and Decommissioning; Operation and Maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, these features are not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
			<ul style="list-style-type: none"> Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	These non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the Proposed Development and therefore, LSE cannot be discounted in relation to all effects alone.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> Bar-tailed godwit Black-tailed godwit Curlew Dunlin Golden plover Grey plover Knot Little egret Oystercatcher Pink-footed goose 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> • Pintail • Redshank • Ringed plover • Ruff • Sanderling • Shelduck • Turnstone • Whooper swan 					
Duddon Estuary SPA	41.64	41.64	<ul style="list-style-type: none"> • Knot • Pintail • Redshank 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Morecambe Bay SPA and Ramsar	50.02	50.02	<ul style="list-style-type: none"> • Herring gull • Lesser black-backed gull • Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> • Bar-tailed godwit • Dunlin • Eider • Golden plover • Goldeneye • Great crested grebe • Grey plover • Knot • Lapwing • Oystercatcher • Pink-footed goose • Pintail • Red-breasted merganser • Redshank • Ringed plover • Sanderling • Shelduck • Turnstone • Wigeon 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Upper Solway Flats and Marshes SPA and Ramsar	58.68	58.68	<ul style="list-style-type: none"> Barnacle goose Bar-tailed godwit Curlew Golden plover Knot Oystercatcher Pink-footed goose Pintail Redshank Scaup Whooper swan 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Anglesey Terns / Morwenoliaid Ynys Môn SPA	68.75	66.32	<ul style="list-style-type: none"> Arctic tern Common tern Roseate tern Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Loch of Inch and Torrs Warren SPA and Ramsar	72.29	77.99	<ul style="list-style-type: none"> White-fronted goose 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season this feature migrates and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Ribble and Alt Estuaries SPA and Ramsar	76.26	76.26	<ul style="list-style-type: none"> Common tern Black-headed gull 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> • Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	These non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the Proposed Development and therefore, LSE cannot be discounted in relation to all effects alone.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> • Bar-tailed godwit • Bewick's swan • Black-tailed godwit • Common scoter • Curlew • Dunlin • Golden plover • Grey plover • Knot • Lapwing • Oystercatcher • Pink-footed goose • Pintail • Redshank • Ringed plover • Sanderling • Scaup • Shelduck • Teal • Whimbrel • Whooper swan • Wigeon 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Outer Ards SPA and Ramsar	81.08	66.42	<ul style="list-style-type: none"> • Arctic tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> Golden plover Light-bellied brent goose Ringed plover Turnstone 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Strangford Lough SPA and Ramsar	84.54	69.09	<ul style="list-style-type: none"> Arctic tern Common tern Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Bar-tailed godwit Black-tailed godwit Coot Curlew Dunlin Eider Gadwall Golden plover Goldeneye Great crested grebe Greenshank Grey plover Greylag goose Knot Lapwing Light-bellied brent goose Mallard Mute swan Oystercatcher Pintail Red-breasted merganser Redshank Ringed plover Shelduck Shoveler Teal Turnstone Wigeon 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Bowland Fells SPA	85.19	88.70	<ul style="list-style-type: none"> • Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This species is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Killough Bay SPA and Ramsar	90.96	74.82	<ul style="list-style-type: none"> • Light-bellied brent goose 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season this feature migrates and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
North-West Irish Sea SPA	92.20	76.57	<ul style="list-style-type: none"> • Common scoter 	Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement 	During the non-breeding season this feature migrates, however given the distance to the Proposed Development from this SPA any collision impacts will be insufficient to result in LSE. They are therefore screened out during the non-breeding season alone and in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
			<ul style="list-style-type: none"> Manx shearwater 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk Disturbance and displacement 	These non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the Proposed Development and therefore, LSE cannot be discounted in relation to all effects alone.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> Shag Cormorant Herring gull Little tern Roseate tern Common tern Arctic tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Kittiwake Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> Puffin Razorbill Guillemot 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Traeth Lavan, Conway Bay SPA	93.18	93.04	<ul style="list-style-type: none"> Oystercatcher 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season this feature migrates and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Castle Loch, Lochmaben SPA and Ramsar	94.68	107.34	<ul style="list-style-type: none"> Pink-footed goose 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	During the non-breeding season this feature migrates and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Martin Mere SPA and Ramsar	95.34	95.34	<ul style="list-style-type: none"> Pintail Wigeon Pink-footed goose Bewick's swan Whooper swan 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	Migratory birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). Migratory species are consequently less at risk from adverse impacts caused by the "barrier effect". The costs of one-off avoidances during migration are non-significant, accounting for less than 2% of available fat reserves (Masden <i>et al.</i> , 2010 – common eider; Speakman <i>et al.</i> , 2009 – red-throated diver, whooper swan, common scoter). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and these features tend to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
The Dee Estuary SPA and Ramsar	96.25	96.25	<ul style="list-style-type: none"> • Common tern • Little tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Bar-tailed godwit • Black-tailed godwit • Curlew • Dunlin • Grey plover • Knot • Oystercatcher • Pintail • Redshank • Shelduck • Teal 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Mersey Narrows and North Wirral Foreshore SPA and Ramsar	96.84	96.84	<ul style="list-style-type: none"> • Common tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Bar-tailed godwit • Knot • Dunlin • Grey plover • Knot • Oystercatcher • Redshank • Sanderling 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season these features migrate and therefore birds from this SPA may pass through the Proposed Development in very small numbers which will be unlikely to result in LSE. Although numbers are very low for the project alone impacts there is potential for an increased impact in-combination with other developments. They are therefore screened in during the non-breeding season in-combination.	No	Yes - no potential for LSE alone however pathway for effect remains therefore screened in in-combination
Larne Lough SPA	105.69	115.68	<ul style="list-style-type: none"> • Common tern • Roseate tern • Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Ailsa Craig SPA	116.65	116.66	<ul style="list-style-type: none"> Gannet 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature are considered to have high vulnerability to both collision with turbines and to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> Guillemot 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> Herring gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Kittiwake Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Carlingford Lough SPA and Ramsar	122.84	106.14	<ul style="list-style-type: none"> Arctic tern Common tern Roseate tern Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Lough Neagh and Lough Beg SPA and Ramsar	124.57	139.42	<ul style="list-style-type: none"> • Common tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Rockabill SPA	126.63	111.16	<ul style="list-style-type: none"> • Arctic tern • Common tern • Roseate tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Purple sandpiper 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	During the non-breeding season this feature migrates, however given the distance to the Proposed Development from this SPA any collision impacts will be insufficient to result in LSE. They are therefore screened out during the non-breeding season alone and in-combination.	No	No - no potential for LSE
Northern Cardigan Bay / Gogledd Bae Ceredigion SPA	133.93	133.68	<ul style="list-style-type: none"> • Red-throated diver 	Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement 	During the non-breeding season this feature migrates, however given the distance to the Proposed Development from this SPA any collision impacts will be insufficient to result in LSE. They are therefore screened out during the non-breeding season alone and in-combination.	No	No - no potential for LSE
Skerries Islands SPA	135.79	120.33	<ul style="list-style-type: none"> • Cormorant • Herring gull • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • No effects 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Lambay Island SPA	136.41	121.55	<ul style="list-style-type: none"> • Cormorant • Herring gull • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • No effects 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Collision risk Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird feature. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this feature tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Guillemot Razorbill Puffin 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> Kittiwake Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Boyne Estuary SPA	138.88	122.61	<ul style="list-style-type: none"> Little tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
South Dublin Bay and River Tolka Estuary SPA	140.41	154.83	<ul style="list-style-type: none"> • Common tern • Arctic tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Ireland's Eye SPA	145.36	130.83	<ul style="list-style-type: none"> • Cormorant • Herring gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Guillemot • Razorbill 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			<ul style="list-style-type: none"> • Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Howath Head Coast SPA	146.19	131.81	<ul style="list-style-type: none"> • Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA	148.14	143.74	<ul style="list-style-type: none"> • Manx shearwater 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in combination
						migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
South Dublin Bay and River Tolka Estuary SPA	154.83	140.41	<ul style="list-style-type: none"> • Arctic tern • Common tern • Roseate tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Dalkey Islands SPA	155.95	142.02	<ul style="list-style-type: none"> • Arctic tern • Common tern • Roseate tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
The Murrough SPA	166.39	153.51	<ul style="list-style-type: none"> • Little tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Rathlin Island SPA	167.15	163.17	<ul style="list-style-type: none"> • Guillemot • Razorbill • Common gull • Herring gull • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Kittiwake • Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. These features are considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
			<ul style="list-style-type: none"> Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Collision risk Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Puffin 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is not considered to have high vulnerability to collision with turbines but are vulnerable to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Wicklow Head SPA	175.41	163.28	<ul style="list-style-type: none"> Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Poulaphouca Reservoir SPA	183.56	169.18	<ul style="list-style-type: none"> Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	These non-breeding features may have non-breeding season connectivity with the Proposed Development due to their migratory path or proximity to the Proposed Development and therefore, LSE cannot be discounted in relation to all effects alone.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Lough Swilly SPA	226.43	212.91	<ul style="list-style-type: none"> Black-headed gull Common tern Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
North Colonsay Western Cliffs SPA	232.72	238.18	<ul style="list-style-type: none"> Guillemot 	Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Inishtrahull SPA	234.16	226.09	<ul style="list-style-type: none"> Common gull Shag 	Operation and maintenance	<ul style="list-style-type: none"> No effects 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Wexford Harbour & Slobs SPA	241.23	229.32	<ul style="list-style-type: none"> Little tern 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Horn Head to Fanad Head SPA	242.37	229.75	<ul style="list-style-type: none"> Cormorant Guillemot Razorbill Shag 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk Disturbance and displacement 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Collision risk Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and these	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						species tend to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
			<ul style="list-style-type: none"> • Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes – potential for LSE cannot be discounted
Greers Isle SPA	251.98	239.30	<ul style="list-style-type: none"> • Black-headed gull • Common gull • Sandwich tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Lady's Island Lake SPA	258.58	248.07	<ul style="list-style-type: none"> • Arctic tern • Common tern • Roseate tern • Sandwich tern • Black-headed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Skomer, Skokholm & the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA	271.84	266.59	<ul style="list-style-type: none"> • Guillemot • Razorbill • Puffin • Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Manx shearwater • Storm petrel 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, these features are not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and these species tend to show high avoidance of offshore wind farms. Consequently, significant effects would	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
			<ul style="list-style-type: none"> • Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Saltee Islands SPA	272.25	261.40	<ul style="list-style-type: none"> • Guillemot • Razorbill • Puffin • Herring gull • Lesser black-backed gull • Cormorant • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Collision risk • Disturbance and displacement 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> • Gannet 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to both collision with turbines and to displacement/ disturbance from offshore wind farms and vessel	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						traffic (Bradbury et al., 2014). Therefore, LSE cannot be discounted.		
			<ul style="list-style-type: none"> • Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury et al., 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Keeragh Islands SPA	273.55	262.12	<ul style="list-style-type: none"> • Cormorant 	Operation and maintenance	<ul style="list-style-type: none"> • No effects 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward et al., 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Inishbofin, Inishdooley and Inishbeg SPA	276.76	262.94	<ul style="list-style-type: none"> • Arctic tern • Common gull • Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward et al., 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Treshnish Isles SPA	278.60	284.53	<ul style="list-style-type: none"> • Storm petrel 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury et al., 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Grassholm SPA	279.32	273.07	<ul style="list-style-type: none"> • Gannet 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement • Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward et al., 2019) for designated seabird features. This feature is considered to have high vulnerability to both collision with turbines and to displacement/	Yes	Yes – LSE cannot be discounted

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in combination
						disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.		
West Donegal Coast SPA	281.50	267.15	<ul style="list-style-type: none"> Razorbill Herring gull Cormorant Shag 	Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			<ul style="list-style-type: none"> Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Tory Island SPA	281.73	268.36	<ul style="list-style-type: none"> Fulmar 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. However, this feature is not vulnerable to either collision with turbines or to displacement/ disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Birds may pass windfarms during their migrations; however, the impact is considerably less than for species that come into contact with windfarms daily (e.g., central place foragers during	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						the breeding season). The negligible numbers that do migrate through the Proposed Development would only do so on two occasions per year and this species tends to show high avoidance of offshore wind farms. Consequently, significant effects would not manifest on this SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
			<ul style="list-style-type: none"> • Puffin • Razorbill 	Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
West Donegal Islands SPA	284.00	269.82	<ul style="list-style-type: none"> • Common gull • Herring gull • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • Disturbance and displacement • Collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Inishduff SPA	284.21	268.34	<ul style="list-style-type: none"> • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • No effects 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Lough Derg (Donegal) SPA	285.58	269.68	<ul style="list-style-type: none"> • Herring gull • Lesser black-backed gull 	Operation and maintenance	<ul style="list-style-type: none"> • Collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Illancrone and Inishkeeragh SPA	287.63	272.73	<ul style="list-style-type: none"> • Arctic tern • Common tern • Little tern 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Inishmurray SPA	288.59	272.40	<ul style="list-style-type: none"> • Arctic tern • Herring gull • Shag 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Roaninish SPA	288.80	273.65	<ul style="list-style-type: none"> • Herring gull 	Operation and maintenance	<ul style="list-style-type: none"> • Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore,	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						LSE can be discounted in relation to all effects alone or in-combination.		
Ardboline Island and Horse Island SPA	289.88	273.56	<ul style="list-style-type: none"> Cormorant 	Operation and maintenance	<ul style="list-style-type: none"> No effects 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Aughris Head SPA	295.93	279.52	<ul style="list-style-type: none"> Kittiwake 	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to collision with turbines (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
Mid-Waterford Coast SPA	297.20	284.94	<ul style="list-style-type: none"> Herring gull Cormorant 	Operation and maintenance	<ul style="list-style-type: none"> Migratory collision risk 	The Proposed Development has no connectivity with breeding features based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019). Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Seas off St Kilda SPA	449.63	449.63	<ul style="list-style-type: none"> Gannet 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to both collision with turbines and to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes – LSE cannot be discounted
St Kilda SPA	465.79	465.79	<ul style="list-style-type: none"> Gannet 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to both collision with turbines and to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
The Bull and The Cow Rocks SPA	495.72	480.86	<ul style="list-style-type: none"> Gannet 	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to both collision with turbines and to displacement/disturbance from offshore wind farms and vessel	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
						traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.		
Skelligs SPA	496.06	480.80	• Fulmar	Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019), however this feature has very low vulnerability to displacement and collision (Bradbury <i>et al.</i> , 2014). Although previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke <i>et al.</i> , 2016), due to the large foraging range for this feature, it is determined that significant effects would not therefore manifest on this distant SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within foraging range and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
			• Gannet	Construction and decommissioning; Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development is within the mean-maximum +1SD foraging ranges (Woodward <i>et al.</i> , 2019) for designated seabird features. This feature is considered to have high vulnerability to both collision with turbines and to displacement/disturbance from offshore wind farms and vessel traffic (Bradbury <i>et al.</i> , 2014). Therefore, LSE cannot be discounted.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
			• Manx shearwater	Operation and maintenance	<ul style="list-style-type: none"> Disturbance and displacement Collision risk 	The Proposed Development has connectivity with breeding Manx shearwater based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019), however this feature has very low vulnerability to displacement and collision (Bradbury <i>et al.</i> , 2014). Although previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke <i>et al.</i> , 2016), due to the large foraging range for this feature, it is determined that significant effects would not therefore manifest on this distant SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within foraging range and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Rum SPA	313.59	322.38	• Manx shearwater	Operation and maintenance	<ul style="list-style-type: none"> Collision risk 	The Proposed Development has connectivity with breeding Manx shearwater based on mean-	No	No - no potential for LSE

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Cruagh Island SPA	398.73	382.03			• Disturbance and displacement	maximum +1SD foraging range (Woodward <i>et al.</i> , 2019), however this feature has very low vulnerability to displacement and collision (Bradbury <i>et al.</i> , 2014). Although previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke <i>et al.</i> , 2016), due to the large foraging range for this feature, it is determined that significant effects would not therefore manifest on this distant SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within foraging range and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.		
St Kilda SPA	465.79	465.79						
Blasket Islands SPA	475.64	459.97						
Isles of Scilly SPA and Ramsar	478.32	484.75						
Deenish Island and Scariff Island SPA	482.20	467.17						
Puffin Island SPA	486.36	471.09						
Mingulay and Berneray SPA	346.94	348.99	• Fulmar	Operation and maintenance	• Collision risk • Disturbance and displacement	The Proposed Development has connectivity with breeding fulmar based on mean-maximum +1SD foraging range (Woodward <i>et al.</i> , 2019), however this feature has very low vulnerability to displacement and collision (Bradbury <i>et al.</i> , 2014). Although previous windfarm projects have shown that they have a moderate avoidance rate (Dierschke <i>et al.</i> , 2016), due to the large foraging range for this feature, it is determined that significant effects would not therefore manifest on this distant SPA after the likelihood and severity of effects on the SPA have been apportioned to all SPAs within foraging range and any potential barrier impacts will be non-significant. Therefore, LSE can be discounted in relation to all effects alone or in-combination.	No	No - no potential for LSE
Buchan Ness to Collieston Coast SPA	357.22	357.23						
Cliffs of Moher SPA	364.95	348.66						
Clare Island SPA	376.05	359.35						
Duvillaun Islands SAP	384.84	368.27						
Troup, Pennan and Lion's Heads SPA	385.12	397.75						
High Island, Inishshark and Davillaun SPA	390.88	374.18						
Kerry Head SPA	410.21	394.45						
Shiant Isles SPA	414.17	414.18						
East Caithness Cliffs SPA	419.58	431.64						
Dingle Peninsula SPA	437.93	422.27						
Seas off St Kilda SPA	449.63	453.88						
Iveragh Peninsula SPA	450.15	434.84						
Handa SPA	450.43	450.44						
St Kilda SPA	465.79	469.93						
North Caithness Cliffs SPA	468.8	480.66						

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone	Screened in in-combination
Cape Wrath SPA	472.47	483.59						
Blasket Islands SPA	475.64	459.97						
Isles of Scilly SPA and Ramsar	478.32	484.75						
Deenish Island and Scariff Island SPA	482.2	467.17						
Flannan Isles SPA	483.82	492.50						
Puffin Island SPA	486.36	471.09						
Hoy SPA	492.98	492.98						
Copinsay SPA	510.24	510.25						
Rousay SPA	536.47	548.67						
North Rona and Sula Sgeir SPA	538.25	548.95						
Calf of Eday SPA	547.3	559.62						
West Westray SPA	550.1	562.33						
Seas off Foula SPA	623.53	623.54						
Sumburgh Head SPA	633.12	645.71						
Foula SPA	469.78	662.17						
Noss SPA	666.93	666.93						
Fetlar SPA	714.2	726.78						
Hermaness, Saxa Vord and Valla Field SPA	733.64	746.21						

Table 1.7. Table of sites and features identified for Marine Mammal Receptors.

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
North Anglesey Marine/ Gogledd Môn Forol SAC	40.25	31.86	<ul style="list-style-type: none"> 1351 Harbour porpoise (<i>Phocoena phocoena</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in (potential for LSE) for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance. 	Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
North Channel SAC	49.82	37.43	<ul style="list-style-type: none"> 1351 Harbour porpoise (<i>Phocoena phocoena</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, out of the impacts identified within Table 1.3 this site (and associated features) are screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the proposed development and the designated site both alone and in-combination.		
Strangford Lough SAC	84.54	69.09	<ul style="list-style-type: none"> 1351 Harbour porpoise (<i>Phocoena phocoena</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, 	Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
					<ul style="list-style-type: none"> • INNS, • Changes to prey; and • Habitat loss/disturbance 			
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Murlough SAC	93.45	77.15	<ul style="list-style-type: none"> • 13366 Harbour seal (<i>Phoca vitulina</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) are screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Changes to prey; and • Habitat loss/disturbance 	Harbour seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Harbour seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
The Maidens SAC	121.10	113.38	<ul style="list-style-type: none"> • 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Changes to prey; and • Habitat loss/disturbance 	Grey seal has been screened out from assessment (no potential for LSE) for these features as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Grey seal has been screened out from assessment for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Pen Llyn a'r Sarnau/ Llyn Peninsula and the Sarnau SAC	130.37	129.49	<ul style="list-style-type: none"> • 1349 Bottlenose dolphin (<i>Tursiops truncatus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
			<ul style="list-style-type: none"> 1366 Grey seal (<i>Halichoerus grypus</i>) 		<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Bottlenose dolphin and grey seal have been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the proposed development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> Accidental pollution; and EMF 	Bottlenose dolphin and grey seal have been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
West Wales Marine / Gorllewin Cymru Forol SAC	132.93	130.40	<ul style="list-style-type: none"> 1351 Harbour porpoise (<i>Phocoena phocoena</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> Accidental pollution; and EMF 	Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Cardigan Bay/ Bae Ceredigion SAC	190.42	190.00	<ul style="list-style-type: none"> 1349 Bottlenose dolphin (<i>Tursiops truncatus</i>) 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Bottlenose dolphin and grey seal have been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> Accidental pollution; and 	Bottlenose dolphin and grey seal have been screened out from assessment (no potential for LSE) for these effects as a		

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
Pembrokeshire Marine/ Sir Benfro Forol SAC	253.24	248.05	<ul style="list-style-type: none"> 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> EMF Underwater noise 	<p>result of the distance between the Proposed Development and the designated site both alone and in-combination.</p> <p>Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.</p>	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
				Operation & Maintenance	<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance Accidental pollution; and EMF 	<p>Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.</p> <p>Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.</p>		
Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC	266.98	266.36	<ul style="list-style-type: none"> 1351 Harbour porpoise (<i>Phocoena phocoena</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	<p>Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.</p>	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
				Operation & Maintenance	<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance Accidental pollution; and EMF 	<p>Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.</p> <p>Harbour porpoise has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.</p>		
Treshnish Isles SAC	278.41	278.41	<ul style="list-style-type: none"> 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	<p>Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.</p>	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
				Operation & Maintenance	<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, 	<p>Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.</p>		

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
					<ul style="list-style-type: none"> • Changes to prey; and • Habitat loss/disturbance 			
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Lundy SAC	325.17	324.57	<ul style="list-style-type: none"> • 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Changes to prey; and • Habitat loss/disturbance 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Sound of Barra SAC	356.44	356.44	<ul style="list-style-type: none"> • 13366 Harbour seal (<i>Phoca vitulina</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Changes to prey; and • Habitat loss/disturbance 	Harbour seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Harbour seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Ascrib, Isay and Dunvegan SAC	377.91	377.91	<ul style="list-style-type: none"> • 13366 Harbour seal (<i>Phoca vitulina</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Harbour seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> Accidental pollution; and EMF 	Harbour seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Monach Islands SAC	412.86	412.86	<ul style="list-style-type: none"> 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> Accidental pollution; and EMF 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
Isles of Scilly Complex SAC	481.34	475.05	<ul style="list-style-type: none"> 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> Suspended sediment deposition, Accidental pollution, INNS, Changes to prey; and Habitat loss/disturbance 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> Accidental pollution; and 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance		

Site Name	Distance to Offshore Array (km)	Distance to Offshore Electrical Connection Search Area (km)	Qualifying Features	Project Phase	Effects	Source – Pathway - Receptor	Screened in alone?	Screened in in-combination?
					<ul style="list-style-type: none"> • EMF 	between the Proposed Development and the designated site both alone and in-combination.		
North Rona SAC	540.72	540.73	<ul style="list-style-type: none"> • 1366 Grey seal (<i>Halichoerus grypus</i>) 	Constructing & Decommissioning	<ul style="list-style-type: none"> • Underwater noise 	Based on the distance from the site to the Proposed Development, this site (and associated features) is screened in for underwater noise.	Yes	Yes - potential for LSE identified alone therefore screened in in-combination
					<ul style="list-style-type: none"> • Suspended sediment deposition, • Accidental pollution, • INNS, • Changes to prey; and • Habitat loss/disturbance 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		
				Operation & Maintenance	<ul style="list-style-type: none"> • Accidental pollution; and • EMF 	Grey seal has been screened out from assessment (no potential for LSE) for these effects as a result of the distance between the Proposed Development and the designated site both alone and in-combination.		

1.6.6 Summary of Screening

Screening for LSE

1.6.6.1 The following transboundary protected sites were screened in for further assessment and can be seen in Figure 1.2:

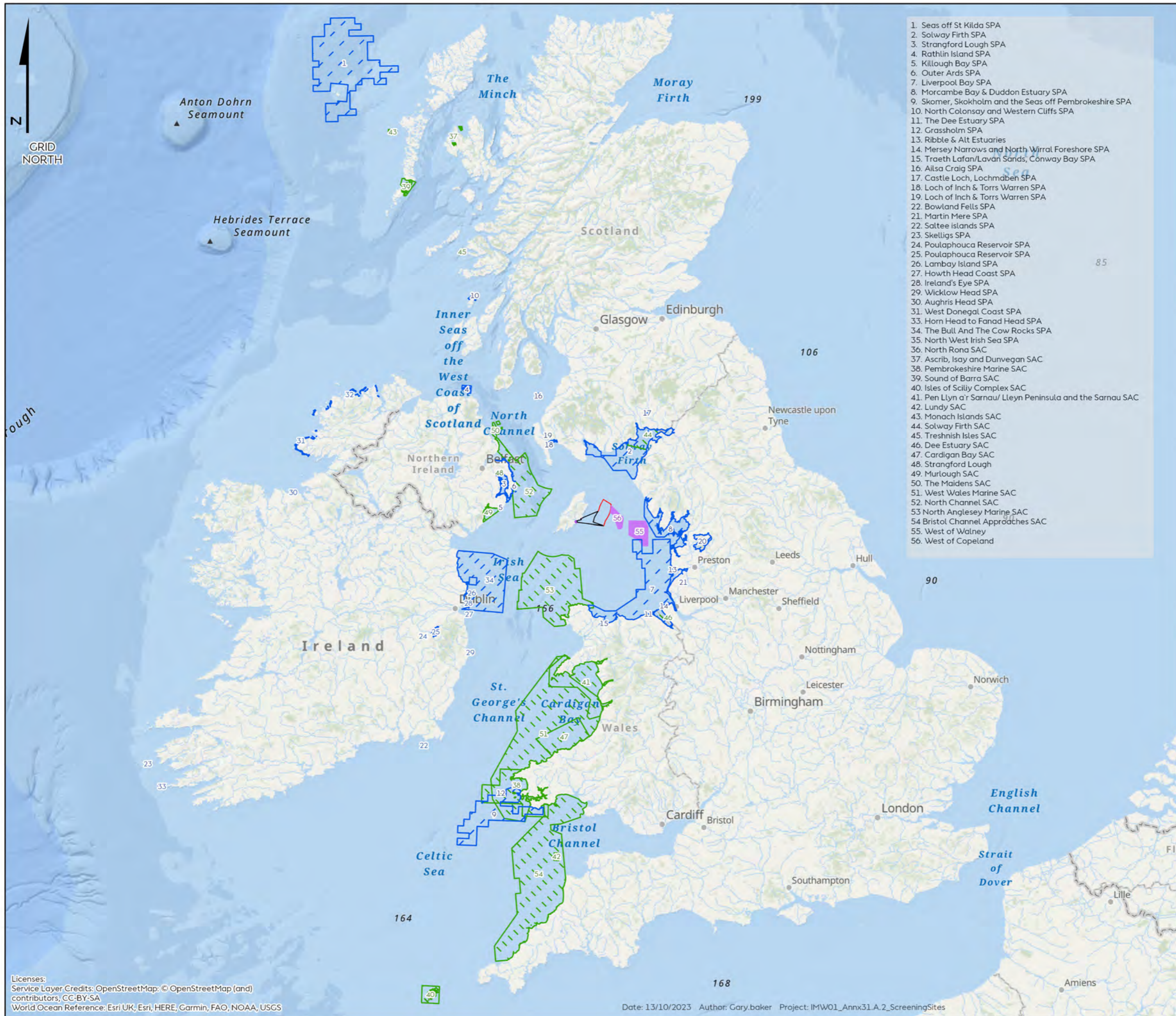
- No sites screened in for Subtidal and intertidal ecological receptors;
- No sites screened in for Migratory Fish Ecology Receptors;
- Ornithological Receptors;
 - Solway Firth SPA;
 - Liverpool Bay/Bae Lerpwl SPA;
 - Morecambe Bay and Duddon Estuary SPA;
 - Dudden Estuary SPA and Ramsar;
 - Morecambe Bay SPA and Ramsar;
 - Upper Solway Flats and Marshes SPA and Ramsar;
 - Loch of Inch and Torrs Warren SPA and Ramsar;
 - Ribble and Alt Estuaries;
 - Outer Ards SPA and Ramsar;
 - Strangford Lough SPA Ramsar;
 - Bowland Fells SPA;
 - Killough Bay SPA Ramsar;
 - North-West Irish Sea SPA;
 - Traeth Lafan/Lavan Sands, Conway Bay SPA;
 - Castle Loch, Lochmaben SPA and Ramsar;
 - Martin Mere SPA;
 - The Dee Estuary SPA and Ramsar;
 - Mersey Narrows and North Wirral Foreshore SPA and Ramsar;
 - Ailsa Craig SPA;
 - Lambay Island SPA;
 - Ireland's Eye SPA;
 - Howath Head Coast SPA;
 - Rathlin Island SPA;
 - Wicklow Head SPA;
 - Poulaphouca Reservoir SPA;
 - North Colonsay, Western Cliffs SPA;
 - Horn Head to Fanad Head SPA;

- Skomer, Skokholm & the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA;
- Saltee Islands SPA;
- Grassholm SPA;
- West Donegal Coast SPA;
- Aughris Head SPA;
- Seas off St Kilda SPA;
- The Bull and The Cow Rocks SPA; and
- Skelligs SPA.
- Marine mammal receptors (Underwater noise effects only);
 - Solway Firth SAC;
 - Dee Estuary/ Aber Dyfrdwy SAC;
 - North Anglesey Marine / Gogledd Môn Forol SAC;
 - North Channel SAC;
 - Strangford Lough SAC;
 - Murlough SAC;
 - The Maidens SAC;
 - Pen Llyn a'r Sarnau/ Llyn Peninsula and the Sarnau SAC;
 - West Wales Marine / Gorllewin Cymru Forol SAC;
 - Cardigan Bay/ Bae Ceredigion SAC;
 - Pembrokeshire Marine/ Sir Benfro Forol SAC;
 - Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC;
 - Treshnish Isles SAC;
 - Lundy SAC;
 - Sound of Barra SAC;
 - Ascrib, Isay and Dunvegan SAC;
 - Monach Islands SAC;
 - Isles of Scilly Complex SAC; and
- North Rona SAC.

MCZs

1.6.6.2 The following MCZs were screened in for further assessment for subtidal and intertidal receptors and can be seen in Figure 1.2:

- West of Copeland MCZ; and
- West of Walney MCZ.



1. Seas off St Kilda SPA
2. Solway Firth SPA
3. Strangford Lough SPA
4. Rathlin Island SPA
5. Killough Bay SPA
6. Outer Ards SPA
7. Liverpool Bay SPA
8. Morcambe Bay & Duddon Estuary SPA
9. Skomer, Skokholm and the Seas off Pembrokeshire SPA
10. North Colonsay and Western Cliffs SPA
11. The Dee Estuary SPA
12. Grassholm SPA
13. Ribble & Alt Estuaries
14. Mersey Narrows and North Wirral Foreshore SPA
15. Traeth Lafan/Lavan Sands, Conway Bay SPA
16. Ailsa Craig SPA
17. Castle Loch, Lochmaben SPA
18. Loch of Inch & Torrs Warren SPA
19. Loch of Inch & Torrs Warren SPA
22. Bowland Fells SPA
21. Martin Mere SPA
22. Saltee Islands SPA
23. Skelligs SPA
24. Poulaphuca Reservoir SPA
25. Poulaphuca Reservoir SPA
26. Lambay Island SPA
27. Howth Head Coast SPA
28. Ireland's Eye SPA
29. Wicklow Head SPA
30. Aughris Head SPA
31. West Donegal Coast SPA
33. Horn Head to Fanad Head SPA
34. The Bull And The Cow Rocks SPA
35. North West Irish Sea SPA
36. North Rona SAC
37. Ascrib, Isay and Dunvegan SAC
38. Pembrokeshire Marine SAC
39. Sound of Barra SAC
40. Isles of Scilly Complex SAC
41. Pen Llyn a'r Sarnau/ Llyn Peninsula and the Sarnau SAC
42. Lundy SAC
43. Monach Islands SAC
44. Solway Firth SAC
45. Treshnish Isles SAC
46. Dee Estuary SAC
47. Cardigan Bay SAC
48. Strangford Lough
49. Murlough SAC
50. The Maidens SAC
51. West Wales Marine SAC
52. North Channel SAC
53. North Anglesey Marine SAC
54. Bristol Channel Approaches SAC
55. West of Walney
56. West of Copeland

Moor Vannin

Figure 31.A.2

Protected Sites Screened in for Further Assessment

- Special Protection Areas (SPA)
 - Marine Conservation Zones (MCZ)
 - Special Areas of Conservation (SAC)
- Scoping Boundary**
- Offshore Electrical Connection Search Area
 - Terrestrial Electrical Connection Search Area
 - Offshore Array



Coordinate System: ETRS 1989 UTM Zone 30N
 Scale@A3: 1:3,700,000

0 45 90 180 Kilometres

0 20 40 80 Nautical Miles

REV	REMARK	DATE
1	First issue	13/10/2023

Title: Screening Sites
 Document no: IMW01_Fig31.A.2
 Created by: CB
 Checked by: JG
 Approved by: SB

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1.7 Conclusion

1.7.1.1 This report presents the findings of the transboundary protected sites Screening Assessment for the Proposed Development. The assessment is used to determine whether or not LSE on a protected site could be concluded as a result of the construction, operation and maintenance or decommissioning of the Proposed Development.

1.7.1.2 This screening process has evaluated the potential for significant effects to arise from the implementation of the Proposed Development alone and in-combination on European sites.

1.7.1.3 Screening can result in the following possible conclusions or outcomes:

- **No potential for significant effects and no further assessment required.** Screening establishes that there is no potential for significant effects and the project or plan can proceed as proposed. However, no changes may be made to the nature of the proposal as screened without prior consultation with the Competent Authority as this may invalidate the findings of screening. Documentation of the screening process, including conclusions reached and how decisions were made, must be kept on file.
- **Significant effects are certain, likely or uncertain.** The plan or project must either proceed to Stage 2 or be rejected. Rejection of a plan or project that is too potentially damaging and/or inappropriate ends the process and negates any need to proceed to Stage 2 (AA).

1.7.1.4 Receptors including bird and marine mammals were screened in for the following LSEs:

- Intertidal and Offshore Ornithology receptors including breeding seabirds and non-breeding waterbirds. Screened in for the effects of:
 - Collision risk; and
 - Disturbance and displacement
- Marine mammal receptors
 - Underwater noise.
- The two MCZ sites screened in were screened in for further assessment for subtidal and intertidal ecology receptors including habitat features. Screened in for the pressures of:
 - Suspended sediment/ deposition;
 - Accidental pollution;
 - INNS; and
 - Changes to physical processes only.

1.7.1.5 As it was concluded that significant effect was likely for a number of designated sites both alone and in-combination, for these European sites a PSA Report in accordance with Stage 2 of Figure 1.1 is required to be prepared by the Applicant. This PSA Report will consist of an assessment in line with Stage 2 of the HRA process as outlined in Advice Note 10 of the screened-in European sites. In addition, the Applicant will prepare a Stage 1 MCZ Assessment in line with the MMO 2013 guidance for the screened-in MCZs.

1.8 References

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