

Hornsea Project Three
Offshore Wind Farm



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Preliminary Environmental Information Report:
Chapter 4 - Landscape and Visual Resources (Part 4)

Date: July 2017

Environmental Impact Assessment

Preliminary Environmental Information Report

Volume 3

Chapter 4: Landscape and Visual Resources

Liability

This report has been prepared by RPS, with all reasonable skill, care and diligence within the terms of their contracts with DONG Energy Power (UK) Ltd.

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www.dongenergy.co.uk/hornseaproject3

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4.10 Assessment of significance

4.10.1 Measures adopted as part of Hornsea Three

4.10.1.1 As part of the project design process, a number of designed-in measures have been proposed to reduce the potential for impacts on landscape and visual resources (these are summarised in Table 4.10). This approach has been employed in order to demonstrate commitment to measures by including them in the design of Hornsea Three and have therefore been considered in the assessment presented in section 4.10 below. These measures are considered standard industry practice for this type of development. Assessment of sensitivity, magnitude and therefore significance includes implementation of these measures.

Landfall and Onshore Cable corridor

4.10.1.2 The onshore cable corridor, including the landfall area, has been developed taking into account a number of constraints; in particular, ecological and landscape. The onshore cable corridor will be completely buried underground for its entire length. Where possible, the refined cable corridor will avoid areas of woodland and trees, or where this is not possible, Hornsea Three will seek to minimise tree loss.

4.10.1.3 Opportunities to avoid sensitive receptors will also be investigated, and detailed consideration will be given to the least disruptive, and potentially least visible, places to cross key rights of way. Visual screening of construction works and temporary compounds will also be considered.

4.10.1.4 Generally, affected hedgerows (including hedgerow trees) will be replaced. Species re-introduced will likely be those found within the existing hedgerow, or adjacent hedgerows, minus the tree species, but augmented with other locally native species if found to be species poor. Consideration will also be given to the enhancement of derelict and species-poor hedgerows within the construction corridor. The outline LSMP, which will accompany the Environmental Statement, will provide further detail on the mitigation proposals for minimising impacts on landscape and visual resources that will be agreed with the LPAs and will be considered in the identification of any likely effects during the preparation of the Environmental Statement chapter.

Onshore Construction Compounds

4.10.1.5 Three potential main onshore construction compounds have been identified and are consulted on in the PEIR. Hornsea Three will also require a number of smaller construction compounds along the remainder of the onshore cable route. The location of these is not yet confirmed, but will be identified and assessed in the Environmental Statement. Potential mitigation for the visual screening of the main construction compounds will be discussed within the outline LSMP which will be developed in consultation with the relevant LPAs. These mitigation measures will be considered during the assessment undertaken at the Environmental Statement stage.

Onshore HVAC Booster Station and Onshore HVDC Converter/HVAC Substation

4.10.1.6 The area in which the onshore HVAC booster station is located in a gently undulating landscape that is occupied by predominantly mixed farmland with a strong existing landscape framework. Similarly, the HVDC converter/HVAC substation site is located in a gently undulating landscape of predominantly mixed farmland that is under a slight influence from the nearby settlement of Norwich, and is located adjacent to the A47 and approximately 1km north west of Norwich Main substation.

4.10.1.7 In such topography the verticality of an element is important, be it natural or built. The screening effect of hedgerows and tree belts is more significant if the visual receptor is close to them. However, many layers of hedgerows can also be effective at screening and softening views. To supplement this existing landscape screening, proposals for mitigation planting may be beneficial to visual receptors. Landscape proposals would be detailed in the outline LSMP that will be submitted as part of the Environmental Statement that will accompany the application for Development Consent.

4.10.1.8 While it is recognised that 25 m high buildings will not be screened entirely in some views, a strong landscape structure around the building, will assist in mitigating visual and landscape impacts. The mix of species and width of any planting that may be taken forwards will consider all year round effectiveness of any screening that will be proposed. Mitigation measures will be considered and discussed with the LPA post PEIR to minimise the effects of Hornsea Three on the landscape character. If planting were taken forwards, this will also assist in habitat creation.

4.10.1.9 Potential landscape mitigation for the onshore HVAC booster station and onshore HVDC converter/HVAC substation will likely consist of a mix of woodland, shrubs and wildflower meadow on the boundaries of the sites, incorporating existing planting if possible. Proposals will be detailed in the outline LSMP that will be agreed with the LPAs. The mitigation set out in the LSMP will be taken into consideration during the determination of effects at the Environmental Statement stage. The extent of any potential landscape planting at these sites will be considered further once the design and site layout is further progressed. The arrangement of buildings on the sites also creates an opportunity to mitigate visual impacts, and opportunities to do that through careful positioning of buildings and equipment will be considered.

4.10.1.10 The façade style and general external treatment of the onshore HVAC booster station and onshore HVDC/HVAC substation buildings will be discussed with the relevant LPAs. Façade treatments can be used very effectively to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will continue to discuss these principles with the relevant stakeholders as the project design work progresses, and in response to ongoing consultation. These additional mitigation measures will be taken into consideration for the determination of effects in the Environmental Statement, once they have been fully defined.

Table 4.10: Summary of designed-in measures adopted as part of Hornsea Three.

Measures adopted as part of Hornsea Three	Justification
The location of the onshore cable corridor avoids as many landscape features as possible (e.g. areas of woodland).	To reduce the impact of the project upon existing landscape features.
The onshore cable corridor will be completely buried underground for its entire length.	To reduce the potential landscape and visual impact of the project during the operation and maintenance phase.
The location of the onshore HVAC booster station and onshore HVDC converter/HVAC substation are closely associated with existing woodland.	To reduce the impact of the project on nearby residential settlements.
An outline LSMP will be produced and followed. The LSMP will contain a landscape plan, any details for mitigation planting. It will also detail management of the proposed planting to enable the proposed planting to thrive.	Measures will be adopted to minimise the reduction of existing vegetation and provide landscape mitigation to help to screen parts of the development and increase biodiversity.
Replacement hedgerow planting along the onshore cable corridor (where practical) with shallow-rooted shrubs.	Mitigation for hedgerows removed. Shrubby species only over the onshore cable corridor to prevent disturbance of the cables by tree roots.
Gapping up of derelict hedgerows that are impacted upon by the construction phase (where practical). Increasing diversity in species-poor hedgerows. Replacement tree planting, on a one for one basis within hedgerows, not over the cables, of any trees removed during the construction works.	Enhancement of landscape character, visual resources and ecological habitats. Trees not replanted over the onshore cable corridor to prevent disturbance of the cables by tree roots.
Restoration and repair of gates and fences that have been removed/damaged during the construction works.	Mitigation and enhancement of landscape character and visual resources.

4.11 Construction Phase

- 4.11.1.1 The impacts of the onshore construction of Hornsea Three have been assessed on landscape and visual resources. The environmental impacts arising from the construction of Hornsea Three are listed in Table 4.5 above along with the maximum design scenario against which each construction phase impact has been assessed.
- 4.11.1.2 The anticipated onshore activities during the construction phase are set out in full within volume 1, chapter 3: Project Description, section 3.7.1. The likely significant effects of the various onshore construction elements of Hornsea Three, upon the various landscape resources, are considered in section 4.11.2. This includes the consideration of night time effects. The likely significant effects of the various onshore construction elements of Hornsea Three, upon the various visual receptors, are considered in section 4.11.3. This includes the consideration of night time effects.

- 4.11.1.3 As set out at 4.9.3, the details of the lighting during construction are not certain at this stage, but for the purpose of the night time construction effects presented in the PEIR, assumptions have been made, based on experience of similar projects and good working practice. Once a lighting strategy has been defined, a lighting assessment will be conducted and this will go on to inform a detailed determination of night time effects upon the landscape resources.

Potential Impacts

- 4.11.1.4 In the landfall area sections of the beach may have to be closed temporarily to allow for cable installation operations. Work behind the beach will involve heavy machinery to construct the TJBs and heavy machinery will also be involved in the cable crossing of the beach.
- 4.11.1.5 The construction works undertaken along the onshore cable corridor, at the HVAC booster station site and the HVDC converter/HVAC substation site will involve the removal of some hedgerows and trees, the temporary construction of haul roads, compounds, construction side access routes for HGVs, as well as the temporary topsoil, and subsoil mounds and fencing. Construction vehicles and heavy machinery will be viewed moving through the landscape. As well as the laying of the cable, the JBs and LBs will be constructed at intervals along the onshore cable corridor. Where the construction works along the onshore cable corridor are not visible, visual receptors might still be affected by the increase in construction traffic. Construction compounds and access will be assessed at the Environmental Statement stage when details of size and location are known.
- 4.11.1.6 It will be necessary to divert or temporarily stop up some public rights of way on the onshore cable route for different length periods through the works. These will range from temporary diversions, lasting a number of days, to diversions that could last for the duration of the works. This will impact on people using the footpaths, bridleways and cycle routes, who will experience the construction works intermittently. Chapter 6: Land Use, Agriculture and Recreation provides details of those public rights of way that may be affected. Management measures for those diversions will be developed and agreed in consultation with Norfolk County Council.
- 4.11.1.7 Mitigation measures will be set out in the outline LSMP that will be agreed with the LPAs. This further mitigation will be considered within the assessment of effects set out within the Environmental Statement alongside the fully defined scheme of construction activities.
- ### 4.11.2 Landscape Effects
- 4.11.2.1 Those effects that have the potential to be significant are set out below.

Impacts of the construction of the onshore cable route may affect designated landscapes and landscapes noted within planning policy, NSCAs and NCAs.

Landfall and Onshore Cable Corridor to the South of the Convergence of the Two Landfall Sections

- 4.11.2.2 No potential significant effects on designated landscapes, landscapes noted within planning policy, NSCAs or NCAs were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Impacts of construction of the onshore cable route may affect LCAs.

Landfall

North Norfolk District Landscape Character Areas

- 4.11.2.3 No potential significant effects on district LCAs were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Landfall – Western Section

North Norfolk District Landscape Character Areas

Magnitude of impact

- 4.11.2.4 The proposed construction works for the onshore cable corridor will directly affect the CTV1 LCA. The construction works will include the construction of the transition joint bays to the south of the beach area and the onshore cable corridor. Heavy plant will be used for the landfall works and construction traffic will be evident in the areas surrounding the works. The construction works will introduce a dominant and uncharacteristic element into the relatively undeveloped LCA whilst construction works were underway.
- 4.11.2.5 The magnitude of the construction works in the intertidal area will have a direct **major** impact on LCA CTV1 due to the influences of valued landscape elements and a strong character that is mainly intact. The construction activities will have an impact upon the defining elements of the character area.

Sensitivity of receptor

- 4.11.2.6 The LCA is a well-used and relatively undeveloped landscape which is strongly influenced by, and has influences on, the setting of Sheringham Park; and, a quintessentially English coastal landscape with factors such as small fields, wooded copses, heathy boundaries, a steam railway, nestling village with church and windmill. However, the LCA does not exhibit any unique characteristics. Using professional judgement to combine the perceived value and susceptibility of the resource, CTV1 LCA is deemed to be strong in character and of **medium** sensitivity to the proposed temporary change.

Significance of effect

- 4.11.2.7 The significance of effects is considered to be **major adverse** and is significant in EIA terms. The way the construction works are planned, and managed, will affect the significance of the impact when the assessment is updated as part of the Environmental Statement. The selection of the final cable route, and the way it interacts with, and could be viewed from, Public Rights of Way, will be considered carefully when construction plans are further progressed. This will be considered in selecting the final landfall options.

Landfall – Eastern Section

North Norfolk District LCAs

Magnitude of impact

- 4.11.2.8 The proposed construction works for the onshore cable corridor will directly affect the CTV1 LCA. The construction works will include the construction of the transition jointing bays to the south of the beach and the onshore cable corridor. Heavy plant will be used for the landfall works and construction traffic will be evident in the areas surrounding the works. The construction works will introduce a dominant and uncharacteristic element into the relatively undeveloped LCA.
- 4.11.2.9 The magnitude of the construction works in the intertidal area will have a direct **major** impact on LCA CTV1 due to the influences of valued landscape elements and a strong character that is mainly in-tact. The construction activities will have an impact upon the defining elements of the character area.

Sensitivity of receptor

- 4.11.2.10 The LCA is a well-used and relatively undeveloped landscape which is strongly influenced by and has influences on the setting of Sheringham Park; and, a quintessentially English coastal landscape with factors such as small fields, wooded copses, heathy boundaries, a steam railway, nestling village with church and windmill. However, the LCA does not exhibit any unique characteristics. Using professional judgement to combine the perceived value and susceptibility of the resource, CTV1 LCA is deemed to be strong in character and of **medium** sensitivity to the proposed temporary change.

Significance of effect

- 4.11.2.11 The significance of effects is considered to be **major adverse** and is significant. Again, the way the construction works are planned, and managed, will affect the significance of the impact. The selection of the final cable route, and the way it interacts with, and could be viewed from, Public Rights of Way, will be considered carefully when construction plans are further progressed.

Onshore Cable Corridor to the South of the Convergence of the Western and Eastern Sections

- 4.11.2.12 No potential significant effects on LCAs in this section of the onshore cable corridor were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Night time impacts of the construction of the onshore cable route may affect landscape resources.

4.11.2.13 No potential significant night time effects on landscape resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Night time impacts of the construction of the onshore HVAC booster station.

4.11.2.14 No potential significant effects on designated landscapes, landscapes noted within planning policy, NCAs, LCAs or during night time were identified for the construction phase of the onshore HVAC booster station during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Impacts of the construction of the onshore HVDC converter/HVAC substation may affect designated landscapes, landscapes noted within planning policy and NCAs.

4.11.2.15 No potential significant effects on designated landscapes, landscapes noted within planning policy or NCAs during the construction phase of the onshore HVDC converter/HVAC substation have been identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Impacts of construction of the onshore HVDC converter/HVAC substation may affect local LCAs.

4.11.2.16 The construction works will include the construction of the onshore HVDC converter/HVAC substation, side access and construction compounds. Heavy plant will be used in the construction works and construction traffic will be evident within and local to the areas surrounding the works.

South Norfolk District LCAs

4.11.2.17 The construction works for the proposed onshore HVAC booster station lies mostly within LCT B: Tributary Farmland, LCA B1: Tas Tributary Farmland.

Magnitude of impact

4.11.2.18 The magnitude of impact upon LCA B1: Tas Tributary Farmland considers the fact that construction works, including compounds and side accesses and other activities directly affects the LCA. Construction activities within the LCA will reduce the tranquillity, increase movement and modify the landform of the Tas Tributary Farmland which, although influenced by the disturbance provided by traffic using the A47 and existing disturbance at the adjacent quarry site, is largely farmland and exhibits a rural character. The temporary impact will be **major**, due to the fact that the construction of the onshore HVDC converter/HVAC substation falls within the LCA and will introduce an uncharacteristic element to the large open fields.

Sensitivity of receptor

4.11.2.19 The LCA is considered to be an open, gently undulating to flat and sloping landscape incised by shallow tributary valleys; large open arable fields; framed open views across the countryside; scattered remnant hedgerow trees, lining roads or marking former, denuded, field boundaries; and, transportation corridors including main connecting roads. Using professional judgement to combine the perceived value and susceptibility of the resource, the LCA is deemed to be of **medium** sensitivity to the proposed temporary change as it has some distinctive characteristics but is not unique.

Significance of effect

4.11.2.20 The significance of effects is considered to be **major** adverse, which is significant. Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVDC converter/HVAC substation site.

4.11.2.21 The indicative construction strategy will consider how the site interacts with, and could be viewed from, Public Rights of Way, which will be considered carefully when construction plans are further progressed.

Night time impacts of the construction of the onshore HVDC converter/HVAC substation may affect landscape resources.

4.11.2.22 No potential significant night time effects on landscape resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts of the construction of the onshore cable route may affect visual receptors.

Occupiers of residential properties

Magnitude of impact

4.11.2.23 Visual receptors within residential properties along the cable route will witness a varying degree of visual change. The amount of disturbance to views that receptors gain from their properties depends on a number of factors including; the proximity of the construction works to the property, the existing visual screening provided by vegetation and other buildings, the amount of view that the construction works will occupy, the type of construction activities utilised and the location of any compounds. The final location of temporary compounds will be a key factor in this.

4.11.2.24 Where views from properties are heavily limited by foreground vegetation such as that in the residential curtilage, or adjacent buildings, the change to views from these properties is likely to be minimal. Similarly, where the views from properties are orientated away from construction works or compounds, the change is likely to be minimal. Where visual receptors at properties have open views over the adjacent landscape or the views are orientated directly towards the works, the change is likely to be more noticeable.

4.11.2.25 Some visual receptors at the closest residential properties will have no views of any construction works or compounds but may hear the construction activities, while some visual receptors in properties further away from the construction activities may have views of a long stretch of works, depending upon the exact location of the route and the method for construction that is being implemented in the vicinity of the receptors. Where a large amount of views are occupied by the construction works, this will cause the higher levels of change to views than where a smaller amount of the view is occupied.

4.11.2.26 The magnitude of impact for visual receptors at residential properties within the onshore cable route 1 km study area may range between **no change** and **major** depending upon the construction route, compound locations, construction method and equipment used during construction.

Sensitivity of receptor

4.11.2.27 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

4.11.2.28 Visual receptors at residential properties will witness a range of effects, depending on the final onshore cable route, the location of compounds, construction methods in their immediate vicinity, the type of view available from the property and the amount of the construction that will be visible. The significance of effect that visual receptors at residential properties within the onshore cable route 1 km study area will witness, will range between **negligible** and **major** adverse.

4.11.2.29 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Hornsea Three will consider opportunities to site the cable away from sensitive receptors, and consider further mitigation if necessary.

4.11.2.30 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Users of public rights of way (PRoW) including National Trails, promoted paths, cycle routes and Access Land

Magnitude of impact

4.11.2.31 Those visual receptors passing along the various public rights of way will have views of varying amounts of the construction activities from the different routes that are located within the onshore cable route 1 km study area. The amount of construction work visible for receptors using a single route will vary as they pass along the path or through the public access land. The magnitude of impact for visual receptors using PRoWs in the study area will depend upon the type of works occurring, the amount of route affected, the amount of view affected, the proximity of the route to the works, the type of works occurring, and the treatment of the footpath. In some cases it may be necessary to divert routes or close them, depending upon the method of construction and the frequency of use that the route experiences.

4.11.2.32 Some routes may pass very close to construction works and there be no change to any views while other routes may be further away but receptors will witness a change to views for a large section of the route, depending on the exact location of the cable route and construction compounds, the construction methods and the level of visual screening that is present between visual receptors and the construction activities. Other routes may be diverted away from the works. Construction operations will vary in duration in particular parts of the onshore cable route, and may be quite short in duration in some sections. Where the largest amount of construction work is visible for the largest sections of the route, the higher levels of change will be experienced.

4.11.2.33 The magnitude of impact that visual receptors using PRoWs and Access Land within the onshore cable route 1 km study area may range between **no change** and **major**, depending upon the exact construction route, compound locations, method of construction and the type of equipment used.

Sensitivity of receptor

4.11.2.34 Visual receptors using public rights of way, cycle routes or Access Land generally do so in order to experience the outdoors and they place a value on the views that they gain while they experience the recreational resource. Visual receptors experiencing the views from these routes have a low tolerance to change and as such the sensitivity of the receptors is considered to be **high**. Once the onshore cable route has been further refined, specific potential views will be identified, and assessed. Consideration of views from public rights of way, cycle routes and Access Land will be considered as part of the ongoing cable route refinement process.

Significance of effect

4.11.2.35 Visual receptors will witness a range of effects depending on the final onshore cable route, the location of compounds, construction methods in their immediate vicinity, the type of view available and the amount of the construction that will be visible. The significance of effect that visual receptors on PRoWs within the onshore cable route 1 km study area will witness, will range between **negligible** and **major** adverse.

4.11.2.36 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Hornsea Three will consider opportunities to site the cable away from Public Rights of Way, although it is accepted that it will not be possible to avoid them in many cases. Where it cannot be avoided, Hornsea Three will develop management plans for the temporary diversion or stopping up of those routes, in consultation with Norfolk County Council.

4.11.2.37 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the onshore cable route construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Tourist and recreational receptors (other than users of PRoW, etc.)

Magnitude of impact

4.11.2.38 Tourist and recreational receptors who have travelled to the area but are not experiencing views from PRoWs or Access Land may have varying views of the construction works of the onshore cable route from within the 1 km study area. Similarly, visual receptors engaging in sporting activities or outdoor recreation may witness some changes to views as a result of the construction activities. The amount of change that tourist and recreational receptors may witness as a result of the construction activities depends upon the type of construction activity occurring, the proximity of the construction activities and compounds to the receptors, the type of view available (open or enclosed) and the amount of construction activities that will be visible.

4.11.2.39 Where the construction route or construction compound locations are in close proximity to these receptors, they may witness some foreground visual screening that will limit views and where receptors are further from the construction activities, a larger amount may be visible. Where the largest amount of construction works occupy the largest amount of views, the higher levels of visual change will be experienced. Visual receptors may witness changes to views that range from **no change** to **major** depending upon the exact construction route, compound locations and method of construction.

Sensitivity of receptor

4.11.2.40 Visual receptors engaging in sporting activities or outdoor recreation are considered to have a **medium** sensitivity to change as although they are engaged in outdoor recreation, the focus of their activity is not the views over the landscape itself. Those visual receptors that have travelled to an area in order to enjoy the visual amenity of the designated landscape are considered to have a **high** sensitivity to change. However, visual receptors in undesignated landscapes and not on PRoWs are considered to have a **low** sensitivity to change with views in undesignated landscapes that are heavily disturbed, considered to have a **negligible** sensitivity.

4.11.2.41 The sensitivity of visual receptors that are tourists or recreational receptors may range between **negligible** and **high**, depending upon the type of receptor and the type of landscape that they are in when they are experiencing the view.

Significance of effect

4.11.2.42 Visual receptors within the onshore cable route 1 km study area that are engaged in outdoor recreation or are tourists visiting the area (that does not include users of PRoWs) may not be there with the purpose of enjoying the view and as such may experience a significance of effect that ranges from **negligible** to **major** adverse. The significance of effect will be affected by the exact location of the cable route, the location of construction compounds, the construction methods and the type of view available as well as the whether the receptors are located within any landscape designations.

4.11.2.43 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application.

4.11.2.44 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the onshore cable route construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Users of community facilities

Magnitude of impact

4.11.2.45 Views for visual receptors using community facilities within the onshore cable route 1 km study area will witness a varying degree of visual change. The amount of disturbance to views that receptors experience depends upon the type of views currently available will help to determine the level of change that the construction works will cause to visual receptors. The magnitude of impact will also be influenced by the exact location of the construction works, compound locations and the type of construction activities that will be required.

4.11.2.46 Where open views are available from the community facilities with long or wide ranging views over the adjacent landscape, or views are orientated directly towards the construction activities, the change to views is likely to be more noticeable than where a small amount of view is occupied by the construction activities. The magnitude of impact that is likely to occur as a result the construction activities may range from **no change** to **major**.

Sensitivity of receptor

4.11.2.47 Visual receptors at community facilities within landscape designations are considered to have a **medium** sensitivity to change as although they are in an area that is designated, the focus of activities is not the landscape. Where visual receptors in community facilities are located within undesignated landscapes, they are considered to have a **low** sensitivity to change.

Significance of effect

- 4.11.2.48 The significance of effect will be dictated by the exact location of the cable route, the location of construction compounds, the construction methods and the type of view available as well as the whether the visual receptors are within any landscape designations. Visual receptors at community facilities within the onshore cable route 1 km study area may experience a significance of effect that ranges from **negligible** to **major** adverse.
- 4.11.2.49 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Regard will be had to the location of community facilities and Hornsea Three will, where appropriate, engage with the operators of those facilities to discuss indicative construction plans.
- 4.11.2.50 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Receptors at commercial/business premises

Magnitude of impact

- 4.11.2.51 Visual receptors that occupy their place of work may witness a change as a result of the construction activities. The type of change that these receptors will witness depends upon a number of factors including; the proximity of the construction works to the property, the existing visual screening provided by vegetation and other buildings, the amount of view that the construction works will occupy, the type of construction activities utilised and the location of any compounds.
- 4.11.2.52 Where views from the premises are heavily limited by foreground vegetation or adjacent buildings, the change is likely to be minimal. Where visual receptors have more open views over the adjacent landscape or the views are orientated directly towards the works, the change is likely to be more noticeable. The magnitude of change that visual receptors will witness at their place of work may range from **no change** to **moderate**.

Sensitivity of receptor

- 4.11.2.53 Visual receptors at commercial or business premises are considered to have a **low** sensitivity to change as their attention will not be focused upon the landscape or views.

Significance of effect

- 4.11.2.54 The significance of effect will depend upon the exact location of the cable route, construction compounds, construction methods and the type of view available for visual receptors at their place of work. Visual receptors at commercial or business premises within the onshore cable route 1 km study area may experience a significance of effects that ranges from **negligible** to **minor** adverse.

- 4.11.2.55 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Regard will be had to the location of commercial premises and Hornsea Three will, where appropriate, engage with the managers/owners of those facilities to discuss indicative construction plans.
- 4.11.2.56 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the onshore cable route construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Dynamic receptors, i.e. occupiers of vehicles on roads, trains and marine vessels

Magnitude of impact

- 4.11.2.57 Visual receptors travelling along dynamic routes such as roads and railway lines within the onshore cable route 1 km study area are likely to witness a varying level of visual change during the construction phase. The level of disturbance that visual receptors witness on different sections of a route or on different routes will vary depending upon the exact route of the construction activities, the location of construction compounds, the existing visual and topographical screening, the amount of view the construction works will occupy, the length of route that they are visible from and the type of construction activities.
- 4.11.2.58 Where views along a dynamic route are heavily limited by foreground vegetation, landform of buildings, change to views for visual receptors is likely to be minimal. Where visual receptors on dynamic routes have open views over the adjacent landscape or the works are visible for a large amount of the route or at close range, the change is likely to be more noticeable.
- 4.11.2.59 Visual receptors may witness changes that range from **no change** to **moderate**, depending upon the final details of the route, compounds, type of view and length of route the view occurs for.

Sensitivity of receptor

- 4.11.2.60 Visual receptors travelling on main roads are considered to have a **low** sensitivity to change due to the high speed of travel and the fact that the route is generally not chosen for the views available along the road corridor. Visual receptors travelling on more local roads or roads that pass through designated landscapes are considered to have a **medium** sensitivity to change due to their reason for using a route with scenic value. Similarly, visual receptors travelling along railways within designated landscapes are considered to have a **medium** sensitivity to change as much of their attention will be focused on the view.

Significance of effect

4.11.2.61 The significance of effect upon visual receptors on dynamic routes within the onshore cable route 1 km study area will depend upon the exact location of the construction works, the construction compounds, the type of construction activities and the type of view that receptors gain as they pass along the route as well as the amount of the route that the construction works are visible from. Visual receptors using the dynamic routes in the onshore cable route 1 km study area may witness significance of effects that ranges from **negligible** to **moderate** adverse.

Night time impacts may affect visual receptors during the construction of the onshore cable route.

4.11.2.62 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts of the three main construction compounds may affect visual receptors.

Occupiers of residential properties

Magnitude of impact

4.11.2.63 Visual receptors at residential properties within the 1 km study are around the three main construction compounds will witness a varying degree of visual change. The amount of disturbance to views that receptors gain from their properties depends on a number of factors including; the proximity of the construction compound to the property, the existing visual screening provided by vegetation and other buildings, the amount of view that the construction compound will occupy, the height of any vehicles making deliveries to the compound and the height of elements stored on the construction compounds.

4.11.2.64 Views that are heavily enclosed by foreground vegetation or buildings will be likely to witness minimal changes and views from properties that are orientated away from the compounds will also witness minimal change. Where visual receptors at properties have open views over the adjacent landscape or the views are orientated directly towards the compound, the change is likely to be more noticeable.

4.11.2.65 The magnitude of impact for visual receptors at residential properties within the 1 km study area may range between **no change** and **major** depending upon the compound locations, height of elements on the compound and operational requirements.

Sensitivity of receptor

4.11.2.66 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the main temporary construction compounds is considered to be **high**.

Significance of effect

4.11.2.67 Visual receptors at residential properties will witness a range of impacts depending on the final details regarding the compounds and elements to be stored within them, the type of view available from the property and the amount of the compound that will be visible. The significance of effect that visual receptors at residential properties within the 1 km study area will witness, will range between **negligible** and **major** adverse.

4.11.2.68 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Regard will be had to the location of residential properties and Hornsea Three will, where appropriate, engage with residents to discuss indicative construction plans.

4.11.2.69 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Users of public rights of way (PRoW) including National Trails, promoted paths, cycle routes and Access Land

Magnitude of impact

4.11.2.70 Any visual receptors using the public rights of way in the vicinity will have views of varying amounts of the construction compound from the different routes that are located within the 1 km study area. The amount of the compound that is visible for receptors using a single route will vary as they pass along the path. The level of impact for visual receptors using PRoWs in the study area will depend upon the type of height of the compounds, the amount of route affected, the amount of view affected and the proximity of the route to the compound.

4.11.2.71 Some routes may pass very close to the compound and there be no change to any views while other routes may be further away but receptors will witness a change to views for a large section of the route. Where the largest amount of construction work is visible for the largest section of the route, the higher levels of change will be experienced. The magnitude of impact that visual receptors using PRoWs and Access Land within the 1 km study area may range between **no change** and **major**, depending upon the exact location, compound height and size, and the type of equipment stored on the compound.

Sensitivity of receptor

4.11.2.72 Visual receptors using public rights of way, cycle routes or Access Land generally do so in order to experience the outdoors and they place a value on the views that they gain while they experience the recreational resource. Visual receptors experiencing the views from these routes have a low tolerance to change and as such the sensitivity of the receptors is considered to be **high**.

Significance of effect

- 4.11.2.73 Visual receptors will witness a range of effects depending on the exact location of the compounds, the height of elements stored on the compounds, the type of view available and the amount of the compound that will be visible. The significance of effect that visual receptors on PRowWs within the 1 km study area, will range between **negligible** and **major** adverse.
- 4.11.2.74 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Hornsea Three will consider opportunities to site the cable away from Public Rights of Way, although it is accepted that it will not be possible to avoid them in many cases. Where it cannot be avoided, Hornsea Three will develop management plans for the temporary diversion or stopping up of those routes, in consultation with Norfolk County Council.
- 4.11.2.75 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Tourist and recreational receptors (other than users of PRowW, etc.)

Magnitude of impact

- 4.11.2.76 Tourist and recreational receptors who have travelled to the area and visual receptors engaging in sporting activities but are not experiencing views from PRowWs or Access Land may have views of the construction compounds. The amount of change that tourist and recreational receptors may witness as a result of the compounds depends upon the exact location of the compounds, the height of elements stored on the compounds, the type of view available and the amount of the compound that will be visible.
- 4.11.2.77 Where the largest amount of construction compounds occupy the largest amount of views, the higher levels of visual change will be experienced. Visual receptors may witness changes to views that range from **no change** to **major** depending upon the exact compound locations, height of elements stored on the compound and the amount of the compound that is visible.

Sensitivity of receptor

- 4.11.2.78 Visual receptors engaging in sporting activities or outdoor recreation are considered to have a **medium** sensitivity to change as although they are engaged in outdoor recreation, the focus of their activity is not the views over the landscape itself. Those visual receptors that have travelled to an area in order to enjoy the visual amenity of the designated landscape are considered to have a **high** sensitivity to change. However, visual receptors in undesignated landscapes and not on PRowWs are considered to have a **low** sensitivity to change with views in undesignated landscapes that are heavily disturbed, considered to have a **negligible** sensitivity.

- 4.11.2.79 The sensitivity of visual receptors that are tourists or recreational receptors may range between **negligible** and **high**, depending upon the type of receptor and the type of landscape that they are in when they are experiencing the view.

Significance of effect

- 4.11.2.80 Visual receptors within the 1 km study area that are engaged in outdoor recreation or are tourists visiting the area (that does not include users of PRowWs) may not be there with the purpose of enjoying the view and as such may experience a significance of effect that ranges from **negligible** to **major** adverse. The significance of effect will be affected by whether the visual receptors are within any landscape designations as well as the height of elements on the compound and the amount of compound visible.
- 4.11.2.81 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application.
- 4.11.2.82 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Users of community facilities

Magnitude of impact

- 4.11.2.83 Visual receptors using community facilities within the 1 km study area will witness a varying degree of visual change depending upon the type of views currently available, exact location of the construction compound and the height of element stored on the compound.
- 4.11.2.84 Where open views are available from the community facilities or views are orientated directly towards the construction compound, the change to views is likely to be more noticeable than where a small amount of view is occupied by the compound. The magnitude of impact that is likely to occur as a result the compounds may range from **no change** to **major**.

Sensitivity of receptor

- 4.11.2.85 Visual receptors at community facilities within landscape designations are considered to have a **medium** sensitivity to change as although they are in an area that is designated, the focus of activities is not the landscape. Where visual receptors in community facilities are located within undesignated landscapes, they are considered to have a **low** sensitivity to change.

Significance of effect

- 4.11.2.86 The significance of effect will be dictated by the exact location of the compound, the height of elements stored on the compound and the type of view available as well as the whether the visual receptors are within any landscape designations. Visual receptors at community facilities within the 1 km study area may experience a significance of effect that ranges from **negligible** to **major** adverse.

4.11.2.87 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Regard will be had to the location of community facilities and Hornsea Three will, where appropriate, engage with the operators of those facilities to discuss indicative construction plans.

4.11.2.88 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Receptors at commercial/business premises

Magnitude of impact

4.11.2.89 Those receptors within their place of work may witness a change to views as a result of the construction compounds. The type of change that these receptors will witness depends the proximity of the compound to the property, the existing visual screening provided by vegetation and other buildings, the amount of view that the compound will occupy and the height of elements stored on the compound.

4.11.2.90 Where views are heavily limited by foreground vegetation or buildings, the change is likely to be minimal. Where visual receptors have more open views over the adjacent landscape or the views are orientated directly towards the works, the change is likely to be more noticeable. The magnitude of change that visual receptors will witness at their place of work may range from **no change to moderate**.

Sensitivity of receptor

4.11.2.91 Visual receptors at commercial or business premises are considered to have a **low** sensitivity to change as their attention will not be focused upon the landscape or views.

Significance of effect

4.11.2.92 The significance of effect depends upon the exact location of the construction compounds, the type of view available for visual receptors at their place of work and the height of elements stored on the compound sites. Visual receptors at commercial or business premises within 1 km study area may experience a significance of effects that ranges from **negligible to minor** adverse.

4.11.2.93 Hornsea Three will refine the onshore cable corridor prior to submitting the final DCO application. Regard will be had to the location of commercial premises and Hornsea Three will, where appropriate, engage with the managers/owners of those facilities to discuss indicative construction plans.

4.11.2.94 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy that will consider these aspects further.

Dynamic receptors, i.e. occupiers of vehicles on roads, trains and marine vessels

Magnitude of impact

4.11.2.95 Where visual receptors travel along dynamic routes such as roads and railway lines within the 1 km study area, they are likely to witness some changes as a result of the construction compounds. The level of disturbance that visual receptors witness on different sections of a route or on different routes will vary depending upon the exact location of construction compounds, the existing visual and topographical screening, the amount of view the construction compounds will occupy, the length of route that they are visible from and the height of elements stored on the compounds.

4.11.2.96 Where views along a dynamic route are heavily limited by foreground screening, the change to views for visual receptors is likely to be minimal. Where visual receptors on dynamic routes have open views over the adjacent landscape or the works are visible for a large amount of the route or at close range, the change is likely to be more noticeable. Visual receptors may witness changes that range from **no change to moderate**, depending upon the final details of the compounds, type of view and length of route the view occurs for.

Sensitivity of receptor

4.11.2.97 Visual receptors travelling on main roads are considered to have a **low** sensitivity to change due to the high speed of travel and the fact that the route is generally not chosen for the views available along the road corridor. Visual receptors travelling on more local roads or roads that pass through designated landscapes are considered to have a **medium** sensitivity to change due to their reason for using a route with scenic value. Similarly, visual receptors travelling along railways within designated landscapes are considered to have a **medium** sensitivity to change as much of their attention will be focused on the view.

Significance of effect

4.11.2.98 The significance of effect upon visual receptors on dynamic routes within the 1 km study area will depend upon the exact location of the construction compounds, the height of elements on the construction compounds, the type of view that receptors gain as they pass along the route as well as the amount of the route that the construction compound is visible from. Visual receptors using the dynamic routes in the onshore cable route 1 km study area may witness significance of effects that ranges from **negligible to moderate** adverse.

Night time impacts may affect visual receptors during the construction of the onshore cable route.

Edgefield

4.11.2.99 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts of the construction of the onshore HVAC booster station may affect visual resources.

Magnitude of impact

4.11.2.100 The construction activities will be seen at close range from the visual receptors in and around properties at Dotshill Cottage on the east of Edgefield Street. The temporary construction works will occupy part of the view available with uncharacteristic elements. Visual receptors at Fuel Farm may have partly screened views of the construction activities of the onshore HVAC booster station. The undulating topography of the intervening land will screen some elements from view and where the construction activities can be seen, they will not alter the context of the foreground which will remain the dominant focus in views. The construction activities will have a **moderate** impact on these views.

Sensitivity of receptor

4.11.2.101 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

4.11.2.1 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.

4.11.2.2 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the onshore cable route construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Corpusty and Saxthorpe

Magnitude of impact

4.11.2.3 Visual receptors at Shrubbs Farm has the closest, most open, views in the direction of the onshore HVAC booster station. While the building itself will not be visible, visual receptors at the farm will see vehicles used in the construction works within the compounds located in the arable field opposite the farm. The temporary construction works will alter the character of views available for the duration of the construction and will occupy a large section of the view available. The impact of the construction works on receptors within the farm will be **major**.

4.11.2.4 The construction activities may be visible from Keepers Cottage but the woodland of New Covert and Old Covert provides a high level of screening for the majority of works. Some construction activities will occur close to the property introduces some uncharacteristic elements into views that visual receptors witness. The impact of the construction works will be **moderate**.

Sensitivity of receptor

4.11.2.5 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

4.11.2.1 The significance of effects will be **major adverse** which could be considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.

4.11.2.2 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVAC booster station construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Magnitude of impact

4.11.2.3 Receptors using restricted byway Corpusty RB21 will have some views of the temporary construction activities. The woodland of New Covert and the hedgerow that lines part of the route provides some screening but views through and over it will be available. The construction activities will introduce uncharacteristic elements into the views from the route and will be seen from large sections of the route, although hedgerow vegetation along RB21 will provide some visual screening. The temporary construction works will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.11.2.4 Visual receptors using local paths, do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

- 4.11.2.5 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.
- 4.11.2.6 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVAC booster station construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Little Barningham

Magnitude of impact

- 4.11.2.7 Visual receptors at the residential property of Underwoods may have views of the construction activities of the onshore HVAC booster station but they will occupy only part of views available from the residential property and curtilage. Hedgerow vegetation along Sweetbriar Lane to the south of the property will provide some screening but the temporary construction activities will introduce uncharacteristic elements into the views. The temporary construction activities will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.11.2.8 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

- 4.11.2.9 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.

- 4.11.2.10 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVAC booster station construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Magnitude of impact

- 4.11.2.11 Visual receptors using the local route of Little Barningham BR1 may have views of the construction activities of the onshore HVAC booster station. Foreground vegetation and vegetation along Sweetbriar Lane to the south of will provide some screening. Where visible, the temporary construction activities will introduce uncharacteristic elements into the views from the route but will only occupy part of the view available. The temporary construction works will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.11.2.12 Visual receptors using local route of Little Barningham BR1, do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

- 4.11.2.13 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.
- 4.11.2.14 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVAC booster station construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Night time impacts may affect visual receptors during the construction of the onshore HVAC booster station.

- 4.11.2.15 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts of the construction of the onshore HVAC converter/HVDC substation may affect visual resources.

Keswick and Intwood

Magnitude of impact

- 4.11.2.16 Receptors using the section of Keswick BR5 (Tas Valley Way Promoted Path) that is routed on a road bridge over the A47 will have views of the construction activities at the onshore HVDC converter/HVAC substation. The elevation of the road will allow some views into the site however, the temporary construction works will occupy a small amount of the views available from this elevated section of the route. The construction activities will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.11.2.17 Visual receptors using local route of Keswick BR5 that forms part of the Tas Valley Way Promoted Path, do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

- 4.11.2.18 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.
- 4.11.2.19 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVAC booster station construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Swardeston

Magnitude of impact

- 4.11.2.20 Receptors at the residential properties on Intwood Lane and Cavell House may have some partly screened views of the temporary construction phase. The vegetation on the boundary of the residential curtilages and on intervening land provides some screening and where the construction works are visible they will introduce some elements that are uncharacteristic into the rural views available in these locations but will not alter the context of views. Similarly, visual Receptors at the residential properties and hotel of Mangreen Hall and Mangreen Hall Farm may have some partly screened views of the temporary construction phase. The vegetation on the boundary of the residential curtilages and on intervening field boundaries provides a high level of enclosure and some screening and where the construction works are visible they will not alter the context of views. The temporary construction works may modify the views into rural landscapes and have a moderate impact.

Sensitivity of receptor

- 4.11.2.21 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the temporary construction works is considered to be **high**.

Significance of effect

- 4.11.2.22 The significance of effect will be **major** adverse which is considered significant. Hornsea Three will consider how to further mitigate this impact through the siting of the compound, and site layout. The site layout could provide some screening of construction activity from receptors by, for example, siting welfare and facilities on the edge of the site. Screening of the construction site, through selection of perimeter fence treatments, will also be considered.
- 4.11.2.23 Again, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVAC booster station construction. This will be considered as part of the updated assessment that accompanies the final DCO application.

Night time impacts may affect visual receptors during the construction of the onshore HVDC converter/HVAC substation.

- 4.11.2.24 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

4.11.3 Future monitoring

- 4.11.3.1 The CoCP and the Landscape Scheme and Management Plan will provide details of any monitoring that may be required during construction, at the Environmental Statement stage.

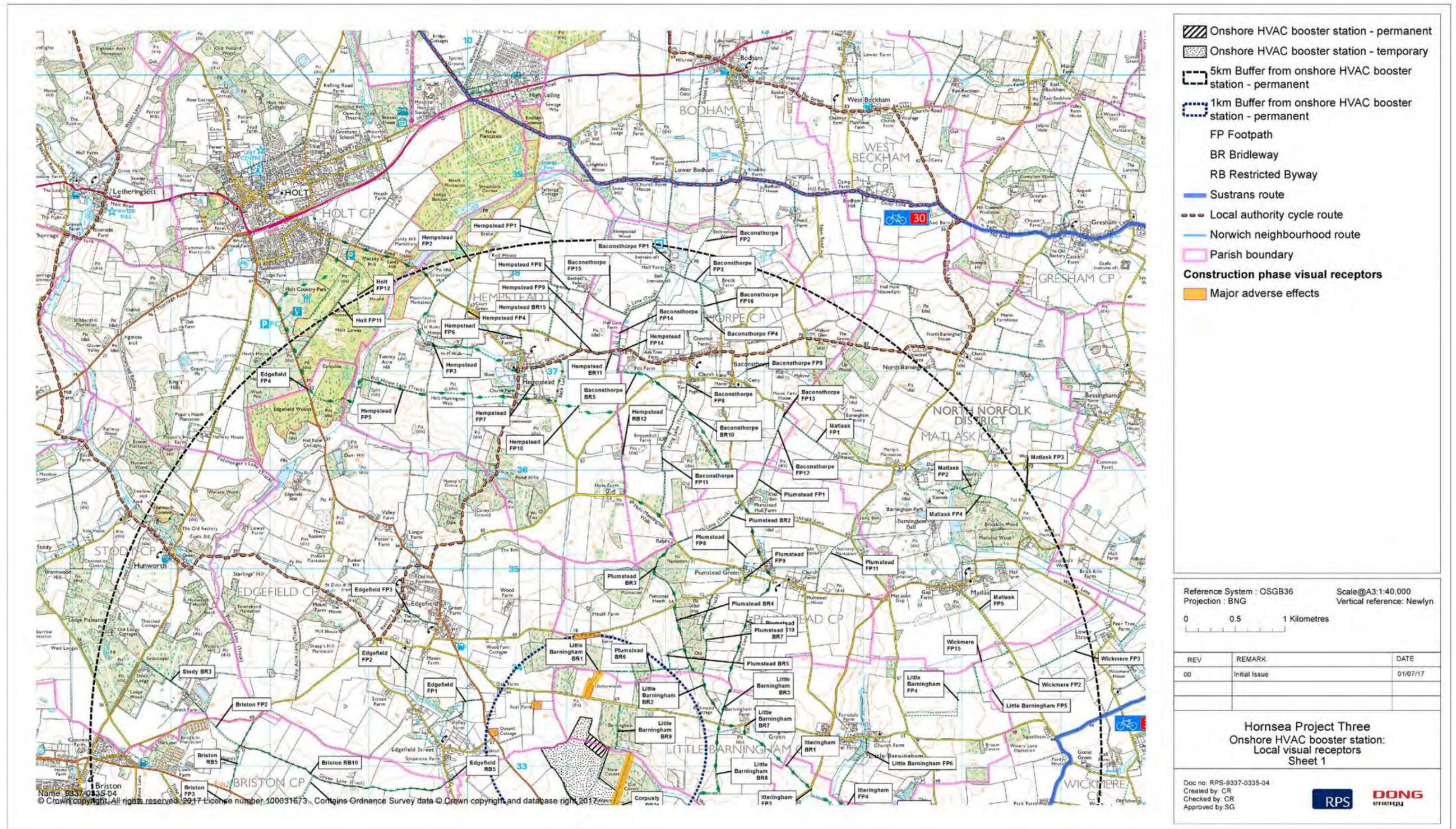


Figure 4.12: Onshore HVAC Booster Station: Local Visual Receptors Sheet 1 of 2.

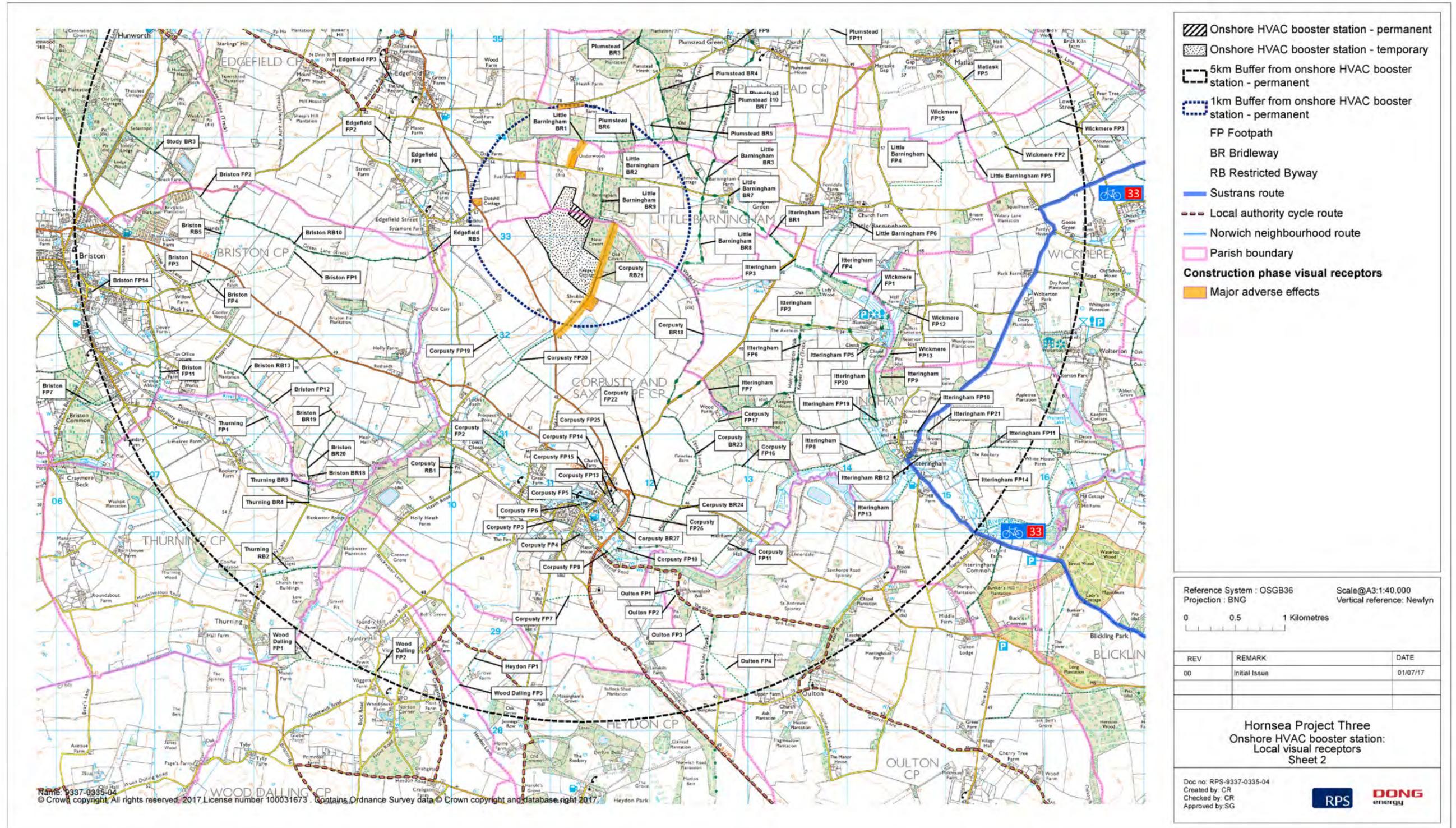


Figure 4.12: Onshore HVAC Booster Station: Local Visual Receptors Sheet 2 of 2.

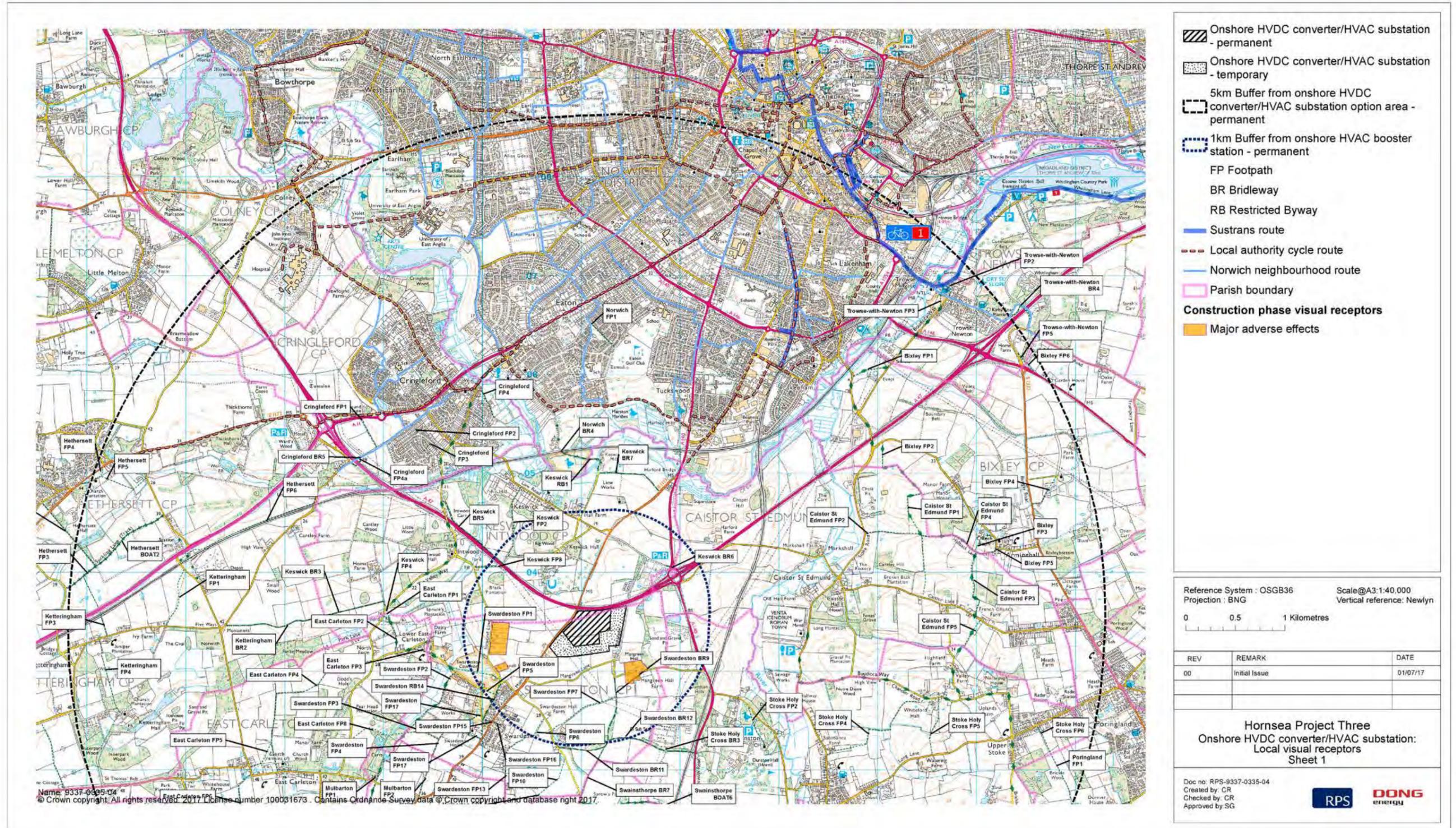


Figure 4.13: Onshore HVDC Converter/HVAC Substation: Local Visual Receptors Sheet 1 of 2.

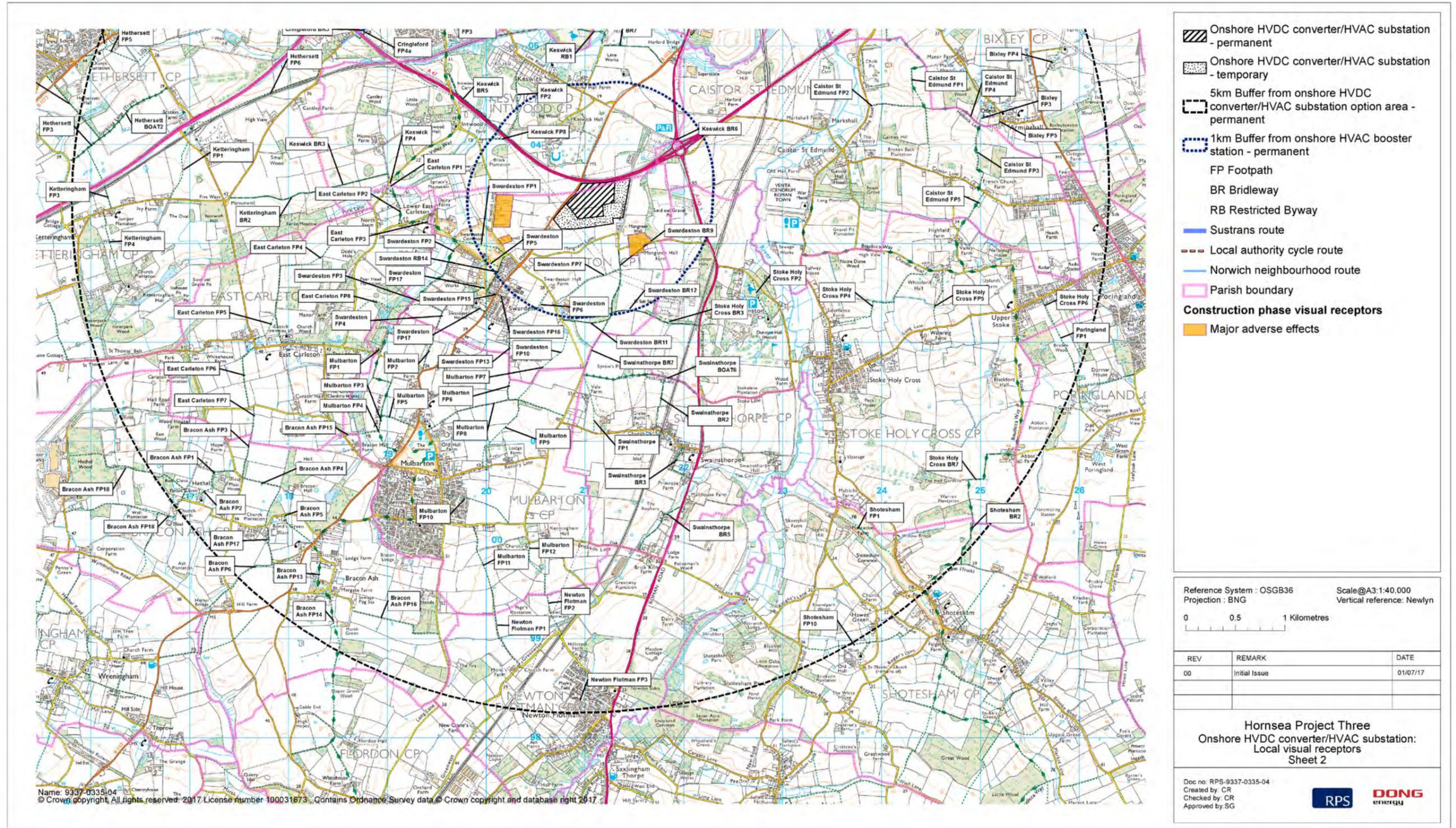


Figure 4.13: Onshore HVDC Converter/HVAC Substation: Local Visual Receptors Sheet 2 of 2.

4.12 Operation and Maintenance Phase

Potential Impacts

- 4.12.1.1 The impacts of the onshore operation and maintenance of Hornsea Three have been assessed on landscape and visual resources. The environmental impacts arising from the operation and maintenance of Hornsea Three are listed in Table 4.5 along with the maximum design scenario against which each operation and maintenance phase impact has been assessed. With regard to the intertidal area, vehicles would infrequently cross the beach for maintenance access and access to undertake any repairs when necessary. The anticipated amount of usage is minimal and will be less than the use of the beach by tractors hauling the fishing boats up the beach.
- 4.12.1.2 Once the works in the onshore cable corridor on the landward side of the beach have been completed the land will be returned to agriculture/its former use. Hedgerows that have been removed will be replanted using shrubby species, to avoid deep root penetration. The TJBs, JBAs and LBAs on the landward side of the sea wall will be covered with a shallow depth of soil and treated according to the outline LSMP. Covers to access these elements will be flush with ground level. It is anticipated that vehicular access to undertake maintenance checks will be undertaken using four wheel drive vehicles along farm tracks. The landscape scheme and management plans will be described in the outline LSMP to be submitted with the Environmental Statement. As a result of the replacement planting schemes and the lack of activity in the onshore cable route study area, the need to assess any effects of the operational and maintenance phase of the onshore cable route has been scoped out in Table 4.6. This enables the assessment process to focus on those effects that are likely to be significant.
- 4.12.1.3 The onshore HVAC booster station and onshore HVDC converter/HVAC substation will consist of large buildings with associated yard containing electrical machinery located on what was an arable field with some hedgerows. An access road will link the site to an existing (upgraded) track. There will be car parking within the footprint of the site. The detailed design will be agreed with the Local Planning Authority prior to consent, but the assessment undertaken in this PEIR considers a worst case set by the Design Envelope. Existing woodland will be retained as will existing hedgerows, where possible.
- 4.12.1.4 During the operation and maintenance phase, the construction of the HVAC booster station and HVDC converter/HVAC substation will have been completed. The addition of the onshore HVAC booster station and HVDC converter/HVAC substation will change the landscape character of the land on which the buildings are located and the character of the landscape immediately adjacent to the buildings. Surrounding character areas will experience indirect impacts, through the introduction of a large building in the landscape. There will also be impacts arising from regular maintenance visits and potential repairs during the operation and maintenance phase.
- 4.12.1.5 Preliminary wireframes for the onshore HVAC booster station and the onshore HVDC converter/HVAC substation have been undertaken from three viewpoints per element and are presented in volume 6, annex 4.7: Onshore HVAC Booster Station and Onshore HVDC Converter/HVAC Substation Baseline Photography and Wirelines. The wireframes display a worst case visual scenario that considers the maximum building parameters that are currently being considered for development. As orientation of buildings within the proposed development parcel are not yet defined, the wireframes present a situation that shows the maximum amount of development visible for any orientation option. Once the development requirements are further refined, a more accurate representation of the likely visible elements will be presented in the form of photomontages for submission as part of the Environmental Statement.
- 4.12.1.6 The likely significant effects of the onshore HVAC booster station and the HVDC converter/HVAC substation, upon the various landscape resources, are considered in section 4.12.2. This includes the consideration of night time effects. The likely significant effects of the various onshore construction elements of Hornsea Three, upon the various visual receptors, are considered in section 4.12.3. This includes the consideration of night time effects.
- 4.12.1.7 As set out at 4.9.3, the details of the lighting during construction are not certain at this stage, but for the purpose of the night time construction effects presented in the PEIR, assumptions have been made, based on experience of similar projects and good working practice. Once a lighting strategy has been defined, a lighting assessment will be conducted and this will go on to inform a detailed determination of night time effects upon the landscape resources that will be presented during the preparation of the Environmental Statement.
- ### 4.12.2 Landscape Effects
- 4.12.2.1 Those effects that have the potential to be significant are set out below.
- Impacts of the operation and maintenance of the onshore HVAC booster station may affect designated landscapes, landscapes noted within planning policy, NCAs and LCAs.**
- 4.12.2.2 No potential significant effects on designated landscapes, landscapes noted within planning policy, NCAs or LCAs were identified for the operation and maintenance phase of the onshore HVAC booster station during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.
- Night time impacts may affect landscape resources during the operation and maintenance of the HVAC booster station.**
- 4.12.2.3 No potential significant night time effects on landscape resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts of the operation and maintenance of the onshore HVDC converter/HVAC substation may affect designated landscapes, landscapes noted within planning policy, NCAs and LCAs.

- 4.12.2.4 No potential significant effects on designated landscapes, landscapes noted within planning policy, NCAs or LCAs were identified for the operation and maintenance phase of the onshore HVDC converter/HVAC substation during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Night time impacts may affect landscape resources during the operation and maintenance of the HVDC converter/HVAC substation.

- 4.12.2.5 No potential significant night time effects on landscape resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

4.12.3 Visual Effects

- 4.12.3.1 Those effects that have the potential to be significant are set out below. A number of viewpoints have been used to inform the visual assessment of the operation and maintenance phase of the HVAC booster station and the HVDC converter/HVAC substation. The location of these viewpoints is shown in Figure 4.10 and 4.11 respectively. The viewpoint photographs that support the visual assessment are presented in volume 6, annex 4.7: Onshore HVAC Booster Station and Onshore HVDC Converter/HVAC Substation Baseline Photographs and Wirelines.
- 4.12.3.2 Figure 4.12 and Figure 4.13 also highlight the locations of visual receptors that are likely to witness effects that are determined to be major adverse and above.
- 4.12.3.3 Where visual receptors within the HVAC booster station and HVDC converter/HVAC substation 5 km study areas have the same sensitivity, (such as visual receptors within residential properties), these have been grouped.

Impacts may affect visual receptors during the operation and maintenance of the onshore HVAC booster station.

Edgefield

Magnitude of impact

- 4.12.3.4 Visual receptors in and around properties at Dotshill Cottage on the east of Edgefield Street would have some close range views of the long term operational phase of the proposed development. The building of the HVAC booster station and associated elements would occupy part of the view available from the property and would constitute aspects that are out of character with the rural views available. Visual receptors at Fuel Farm may have partly screened views of the onshore HVAC booster station with the undulating topography of the intervening land providing an element of visual screening. Where the proposed development forms part of views that receptors gain from these properties, will have a **moderate** impact but will not define the views.

Sensitivity of receptor

- 4.12.3.5 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the onshore HVAC booster station and maintenance and repair activities is considered to be **high**.

Significance of effect

- 4.12.3.6 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant local planning authorities with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.
- 4.12.3.7 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Corpusty and Saxthorpe

Magnitude of impact

- 4.12.3.8 Receptors using restricted byway Corpusty RB21 will have some views of the onshore HVAC booster station. The woodland of New Covert, as well as the hedgerow that lines part of the route provide some screening but views through and over them will be available. The onshore HVAC booster station and maintenance and repair activities will be seen from large sections of the route, although hedgerow vegetation along RB21 will provide some visual screening. The proposed development will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.12.3.9 Visual receptors using local paths, do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of the receptors that will have views of the onshore HVAC booster station and maintenance and repair activities is considered to be **high**.

Significance of effect

- 4.12.3.10 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant local planning authorities with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.
- 4.12.3.11 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Little Barningham

Magnitude of impact

- 4.12.3.12 Visual receptors at the residential property of Underwoods may have views of the onshore HVAC booster station and maintenance and repair activities. Topography, woodland and hedgerow vegetation along Sweetbriar Lane to the south of the property will provide some screening of the building and associated development of the onshore HVAC booster station. The long term operation and maintenance and repair activities for the development will have a **moderate** impact on these views.
- 4.12.3.13 Receptors using bridleway Little Barningham BR1 may have views of the onshore HVAC booster station and maintenance and repair activities. Foreground vegetation and vegetation along Sweetbriar Lane, to the south, will provide some screening. The onshore HVAC booster station and maintenance and repair activities will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.12.3.14 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of receptors that may have views of the onshore HVAC booster station and maintenance and repair activities is considered to be **high**.

Significance of effect

- 4.12.3.15 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant local planning authorities with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.
- 4.12.3.16 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Magnitude of impact

- 4.12.3.17 Visual receptors using the local route of Little Barningham BR1 may have views of the building and associated development of the onshore HVAC booster station. Foreground vegetation and vegetation along Sweetbriar Lane to the south of will provide some screening. Where visible, the development will be seen as an element in part of the views available over the rural landscape. The long term operation and maintenance and repair activities for the development will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.12.3.18 Visual receptors using local route of Little Barningham BR1, do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of the receptors that may have views of the onshore HVAC booster station and maintenance and repair activities is considered to be **high**.

Significance of effect

4.12.3.19 The significance of effects will be **major adverse**. This is considered to be significant. Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant local planning authorities with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.

4.12.3.20 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Night time impacts may affect visual receptors during the operation and maintenance of the onshore HVAC booster station.

4.12.3.21 No potential significant night time effects on visual receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts may affect visual receptors during the operation and maintenance of the onshore HVDC converter/HVAC substation.

Keswick and Intwood

Magnitude of impact

4.12.3.22 Visual receptors using the section of Keswick BR5 (Tas Valley Way Promoted Path) that is routed on a road bridge over the A47 will have views of the onshore HVDC converter/HVAC substation. The elevation of the road will allow views of the long term operational phase of the onshore HVDC converter/HVAC substation and associated maintenance and repair activities. Where the proposed development is visible, it will occupy a small part of the view but will not be a typical element in local views. The long term operation and maintenance and repair activities for the development will have a **moderate** impact on these views.

Sensitivity of receptor

4.12.3.23 Visual receptors that use the local route of BR5 and the long distance route of the Tas Valley Way do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of the receptors that may have views of the onshore HVDC converter/HVAC substation and associated maintenance and repair activities is **high**.

Significance of effect

4.12.3.24 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant local planning authorities with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.

4.12.3.25 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Swardeston

Magnitude of impact

4.12.3.26 Receptors at the residential properties on Intwood Lane and Cavell House may have some partly screened views of the long term operational phase. The vegetation on the boundary of the residential curtilages and on intervening land provides some screening and where the views of the development are available, it will introduce some elements that are uncharacteristic into the rural views in these locations but will not alter the context of views. Similarly, visual receptors at the residential properties and hotel of Mangreen Hall and Mangreen Hall Farm may have some partly screened views of the long term operational phase. The vegetation on the boundary of the residential curtilages and on intervening field boundaries provides a high level of enclosure and some screening and where the development and associated infrastructure is visible, it will not alter the context of views. The long term operation and maintenance phase may modify the views into rural landscapes and have a **moderate** impact.

Sensitivity of receptor

4.12.3.27 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of receptors that may have views of the onshore HVDC converter/HVAC substation and associated maintenance and repair activities is considered to be **high**.

Significance of effect

4.12.3.28 The significance of effect is **major** adverse. Major adverse is significant. Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant local planning authorities with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.

4.12.3.29 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Night time impacts may affect visual receptors during the operation and maintenance of the onshore HVDC converter/HVAC substation.

4.12.3.30 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

4.12.4 Future monitoring

4.12.4.1 The outline LSMP will detail ongoing maintenance and management of potential landscape proposals at the Environmental Statement stage, and will apply through the operation and maintenance phase of the project. The outline LSMP will be developed further as the project design progresses, and the need for any landscape mitigation can be determined. Once specific mitigation proposals/landscape design work has been progressed, the outline LSMP can be further developed.

4.13 Decommissioning phase

Potential Impacts

4.13.1.1 The impacts of the onshore decommissioning of Hornsea Three have been assessed on landscape and visual resources and receptors. The environmental effects arising from the decommissioning of Hornsea Three are listed in Table 4.5 along with the maximum design scenario against which each decommissioning phase impact has been assessed.

4.13.1.2 The decommissioning works in the intertidal area and at the landfall will involve decommissioning machinery to cut, seal and bury the ends of the cables at the TJBs, behind the beach. The TJBs would be left in situ. The decommissioning works along the cable route will involve cutting the ends of the onshore cables at the JPs and removing the cable from the sleeve, which will be left in situ. The JPs and the LBs will be left in situ. As a result of the replacement planting schemes and the lack of activity in the onshore cable route study area, the need to assess any effects of the temporary decommissioning phase of the onshore cable route has been scoped out in Table 4.6. This enables the assessment process to focus on those effects that are likely to be significant.

4.13.1.3 The onshore HVAC booster station and the HVDC converter/HVAC substation buildings and associated infrastructure will be decommissioned and demolished. This will involve heavy plant and construction vehicles. However, it is not at this stage anticipated that any vegetation planted as part of the landscape proposals will have to be removed. Temporary side accesses to the TJBs and JBs will have to be reinstated, if they have not been retained throughout the operation and maintenance phase. It may be necessary to divert some public rights of way for the duration of the decommissioning works, which will impact on people using the footpaths, bridleways and cycle routes. Chapter 6: Land Use, Agriculture and Recreation provide details of those public rights of way that may be affected during the decommissioning phase.

4.13.1.4 During the short period of time over which the decommissioning is expected to take place, no landscape mitigation will be implemented but the landscape planting and mitigation implemented as part of the outline LSMP will provide an element of buffer and visual screening. An agreed Decommissioning Plan will ensure that the impacts of the decommissioning are kept to a minimum.

4.13.1.5 After decommissioning the land will be returned to its present use according to the outline LSMP that will be submitted and considered as part of the Environmental Statement.

4.13.2 Landscape Effects

4.13.2.1 Those effects that have the potential to be significant are set out below.

Impacts during the decommissioning of the onshore HVAC booster station may affect designated landscapes, landscapes noted within planning policy, NCAs or LCAs.

4.13.2.2 No potential significant effects on designated landscapes, landscapes noted within planning policy, NCAs or LCAs were identified for the operation and maintenance phase of the onshore HVAC booster station during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Night time impacts may affect landscape resources during the decommissioning of the onshore HVAC booster station.

4.13.2.3 No potential significant night time effects on landscape resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts during the decommissioning of the onshore HVDC converter/HVAC substation may affect designated landscapes, landscapes noted within planning policy, NSCAs, NCAs and LCAs.

4.13.2.4 No potential significant effects on designated landscapes, landscapes noted within planning policy, NSCAs, NCAs or LCAs were identified for the operation and maintenance phase of the onshore HVDC converter/HVAC substation during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect.

Night time impacts may affect landscape resources during the decommissioning of the onshore HVDC converter/HVAC substation.

4.13.2.5 No potential significant night time effects on landscape resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

4.13.3 Visual Effects

4.13.3.1 A number of viewpoints have been used to inform the visual assessment of the decommissioning phase of the HVAC booster station and the HVDC converter/HVAC substation. The location of these viewpoints is shown in Figure 4.10. The viewpoint photographs that support the visual assessment are presented in volume 6, annex 4.7: Baseline Photography. Figure 4.12 and Figure 4.13 also highlight the locations of visual receptors that are likely to witness effects that are determined to be major adverse and above. Those effects that have the potential to be significant are set out below.

4.13.3.2 Where visual receptors within the HVAC booster station and HVDC converter/HVAC substation 5 km study areas have the same sensitivity, (such as visual receptors within residential properties), these have been grouped.

Impacts may affect visual receptors during the decommissioning of the onshore HVAC booster station.

Corpusty and Saxthorpe

Magnitude of impact

4.13.3.3 Shrubbs Farm has the closest, most open, views in the direction of the onshore HVAC booster station. While decommissioning works on the building itself will not be visible, visual receptors at the farm will have views of vehicles and associated works as part of the decommissioning and may have views of any compounds located outside any mitigation planting. Similarly, Visual receptors at Keepers Cottage may have some views of decommissioning works but the high level of vegetation that makes up New Covert and Old Covert woodlands will provide a high level of screening for the majority of the activities. Some decommissioning activities will occur close to the property. The temporary decommissioning phase will have a **moderate** impact on these views.

Sensitivity of receptor

4.13.3.4 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of the receptors that will have views of the onshore HVAC booster station and maintenance and repair activities is considered to be **high**.

Significance of effect

4.13.3.5 The significance of effects will be **major adverse**. This is considered significant. Hornsea Three will consider further mitigation measures, like the ones discussed in respect of the construction phase impact assessment, during the decommissioning phase.

4.13.3.6 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Magnitude of impact

4.13.3.7 Receptors using restricted byway Corpusty RB21 will have some views of the decommissioning activities for the onshore HVAC booster station. The woodland of New Covert, as well as the hedgerow that lines part of the route provide some screening but views through and over them will be available. The temporary decommissioning works will be seen from large sections of the route, although hedgerow vegetation along RB21 will provide some visual screening the proposed development will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.13.3.8 Visual receptors using the local route do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of receptors that may have views of the temporary decommissioning activities is considered to be **high**.

Significance of effect

- 4.13.3.9 The significance of effect will be **major adverse** and is considered to be significant. Hornsea Three will consider further mitigation measures, like the ones discussed in respect of the construction phase impact assessment, during the decommissioning phase.
- 4.13.3.10 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Night time impacts may affect visual receptors during the decommissioning of the onshore HVAC booster station.

- 4.13.3.11 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

Impacts may affect visual receptors during the decommissioning of the onshore HVDC converter/HVAC substation.

Keswick and Intwood

Magnitude of impact

- 4.13.3.12 Receptors using the section of Keswick BR5 (part of the Tas Valley Way Promoted Path) that is routed on a road bridge over the A47 will have views of the decommissioning activities at the onshore HVDC converter/HVAC substation. The elevation of the road will allow views towards the works. Where the temporary decommissioning works are visible, they will occupy a small part of the view but will not be typical elements in local views. The temporary decommissioning activities for the development will have a **moderate** impact on these views.

Sensitivity of receptor

- 4.13.3.13 Visual receptors using the local route of Keswick BR5 and the Tas Valley Way, do so in order to enjoy the countryside and place value on the views that they gain in doing so. As such, the sensitivity of receptors that may have views of the temporary decommissioning activities is considered to be **high**.

Significance of effect

- 4.13.3.14 The significance of effect will be **major adverse**. Major adverse is considered significant. Hornsea Three will consider further mitigation measures, like the ones discussed in respect of the construction phase impact assessment, during the decommissioning phase.
- 4.13.3.15 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Swardeston

Magnitude of impact

- 4.13.3.16 Visual receptors at the residential properties on Intwood Lane and Cavell House may have partly screened views of the temporary decommissioning activities at the onshore HVDC converter/HVAC substation site. The vegetation on the boundary of the residential curtilages and on intervening land provides some screening and where the decommissioning works are visible, they will introduce some elements that are uncharacteristic into the rural views in these locations but will not alter the context of views. Similarly, visual receptors at the residential properties and hotel at Mangreen Hall and Mangreen Hall Farm may have partly screened views of the decommissioning works. The vegetation on the boundary of the residential curtilages and on intervening field boundaries provide a high level of enclosure and some screening and where the decommissioning works are visible they will not alter the context of views. The temporary decommissioning activities may modify views into the rural landscape and have **moderate** visual impact.

Sensitivity of receptor

- 4.13.3.17 Visual receptors enjoying the countryside from their homes place value on the views that they gain from their properties and have a low tolerance to change. As such, the sensitivity of receptors that may have views of the onshore HVDC converter/HVAC substation and associated maintenance and repair activities is considered to be **high**.

Significance of effect

- 4.13.3.18 The significance of effect will be **major adverse**. Major adverse is considered significant. Hornsea Three will consider further mitigation measures, like the ones discussed in respect of the construction phase impact assessment, during the decommissioning phase.
- 4.13.3.19 These measures will be considered as part of the updated assessment that accompanies the final DCO application.

Night time impacts may affect visual receptors during the decommissioning of the onshore HVDC converter/HVAC substation.

4.13.3.20 No potential significant night time effects on visual resources and receptors were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. A more detailed assessment of night time effects will be included in the Environmental Statement when details of lighting schemes are available.

4.13.4 Future monitoring

4.13.4.1 The Decommissioning Plan and the outline LSMP will provide details of future maintenance and management of the landscape proposals at the Environmental Statement stage.

4.14 Cumulative Effect Assessment Methodology

4.14.1 Screening of other projects and plans into the Cumulative Effect Assessment

4.14.1.1 The Cumulative Effect Assessment (CEA) takes into account the impact associated with Hornsea Three together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise undertaken as part of the 'CEA long list' of projects (see volume 4, annex 5.2: Cumulative Effects Screening Matrix and volume 4, annex 5.3: Location of Cumulative Schemes). Each project on the CEA long list has been considered on a case by case basis for scoping in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

4.14.1.2 In undertaking the CEA for Hornsea Three, it is important to bear in mind that other projects and plans under consideration would have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside Hornsea Three. For example, relevant projects and plans that are already under construction are likely to contribute to cumulative impact with Hornsea Three (providing effect or spatial pathways exist), whereas projects and plans not yet approved or not yet submitted are less certain to contribute to such an impact, as some may not achieve approval or may not ultimately be built due to other factors. For this reason, all relevant projects and plans considered cumulatively alongside Hornsea Three have been allocated into 'Tiers', reflecting their current stage within the planning and development process. This allows the CEA to present several future development scenarios, each with a differing potential for being ultimately built out. Appropriate weight may therefore be given to each Tier in the decision making process when considering the potential cumulative impact associated with Hornsea Three (e.g. it may be considered that greater weight can be placed on the Tier 1 assessment relative to Tier 2). An explanation of each tier is included below:

- Tier 1: Hornsea Three considered alongside other project/plans currently under construction and/or those consented but not yet implemented, and/or those submitted but not yet determined and/or

those currently operational that were not operational when baseline data was collected, and/or those that are operational but have an on-going impact;

- Tier 2: All projects/plans considered in Tier 1, as well as those on relevant plans and programme likely to come forward but have not yet submitted an application for consent (the PINS programme of projects is the most relevant source of information). Specifically, this Tier includes all projects where the developer has submitted a Scoping Report; and
- Tier 3: All projects/plans considered in Tier 2, as well as those on relevant plans and programme likely to come forward but have not yet submitted an application for consent (the PINS programme of projects is the most relevant source of information). Specifically, this Tier includes all projects where the developer has advised PINS in writing that they intend to submit an application in the future but have not submitted a Scoping Report.

4.14.1.3 The specific projects scoped into this CEA and the Tiers into which they have been allocated, are outlined in Table 4.11. The projects included as operational in this assessment have been commissioned since the baseline studies for this project were undertaken and as such were excluded from the baseline assessment.

4.14.2 Guidelines for Landscape and Visual Impact Assessment – Third Edition (GLVIA3) Methodology

4.14.2.1 Chapter 7 of the GLVIA3 details 'Assessing cumulative landscape and visual effects'. Three types of cumulative effect are identified at paragraph 7.3:

- "Cumulative effects as 'the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together' (SNH, 2012:4);
- Cumulative landscape effects as effects that 'can impact on either the physical fabric or character of the landscape, or any special values attached to it' (SNH,2012: 10); and
- Cumulative visual effects as effects that can be caused by combined visibility, which 'occurs where the observer is able to see two or more developments from one viewpoint and/or sequential effects which occur when the observer has to move to another viewpoint to see different developments' (SNH, 2012:11)."

4.14.2.2 The cumulative development is the additional effect of the project in conjunction with other developments of the same type and other major developments, such as road improvements. These should include those that – arise from an indirect consequence of the main project under consideration (GLVIA (2013) paragraph 7.11).

4.14.2.3 The GLVIA3 lists different types of cumulative landscape and visual effects at paragraph 7.17. These can include:

- *“the effects of an extension to an existing development or the positioning of a new development such that it extends or intensifies the landscape and/or visual effects of the first development;*
- *The filling of an area with either the same or different types of development over time, such that it may be judged to have substantially altered the landscape resource and views or visual amenity;*
- *The interactions between different types of development, each of which may have different landscape and/or visual effects and where the total effect is greater than the sum of the parts;*
- *Incremental change as a result of successive individual developments such that the combined landscape and/or visual is significant even though the individual effects may not be;*
- *Temporal effects, referring to the cumulative impacts of simultaneous and/or successive projects that may affect communities and localities over an extended period of time;*
- *Effects of development which have indirect effects on other development, either by enabling it – for example a road development enabling new warehouses to be constructed at a roundabout – or disabling it – for example by sterilising land; both may in turn have landscape and/or visual effects; and*
- *Landscape and/or visual effects resulting from a future action that removes something from the existing landscape which may have consequences for other existing or proposed development – for example an existing woodland may be felled or a building removed, and this in turn may reveal views of existing or proposed developments that would otherwise remain screened.”*

- 4.14.2.4 The GLVIA3 notes at paragraph 7.28; *“The most significant cumulative landscape effects are likely to be those that would give rise to changes in the landscape character of the study area of such an extent as to have major effects on its key characteristics and even, in some cases, to transform it into a different landscape type”* and that *“this may be the case where the project being considered itself tips the balance through its additional effects.”*
- 4.14.2.5 Data required to inform the study in addition to that required for the main assessment includes details of other major projects where they are available. This data has been summarised in Table 4.11: Cumulative Schemes, below.
- 4.14.2.6 For the onshore assessment, the developments to be considered in the assessment of cumulative effects on landscape resources and visual receptors are shown on Figure 4.14 of this chapter. The full list of cumulative schemes identified for the onshore project is illustrated in volume 1, chapter 5: Environmental Impact Assessment Methodology.

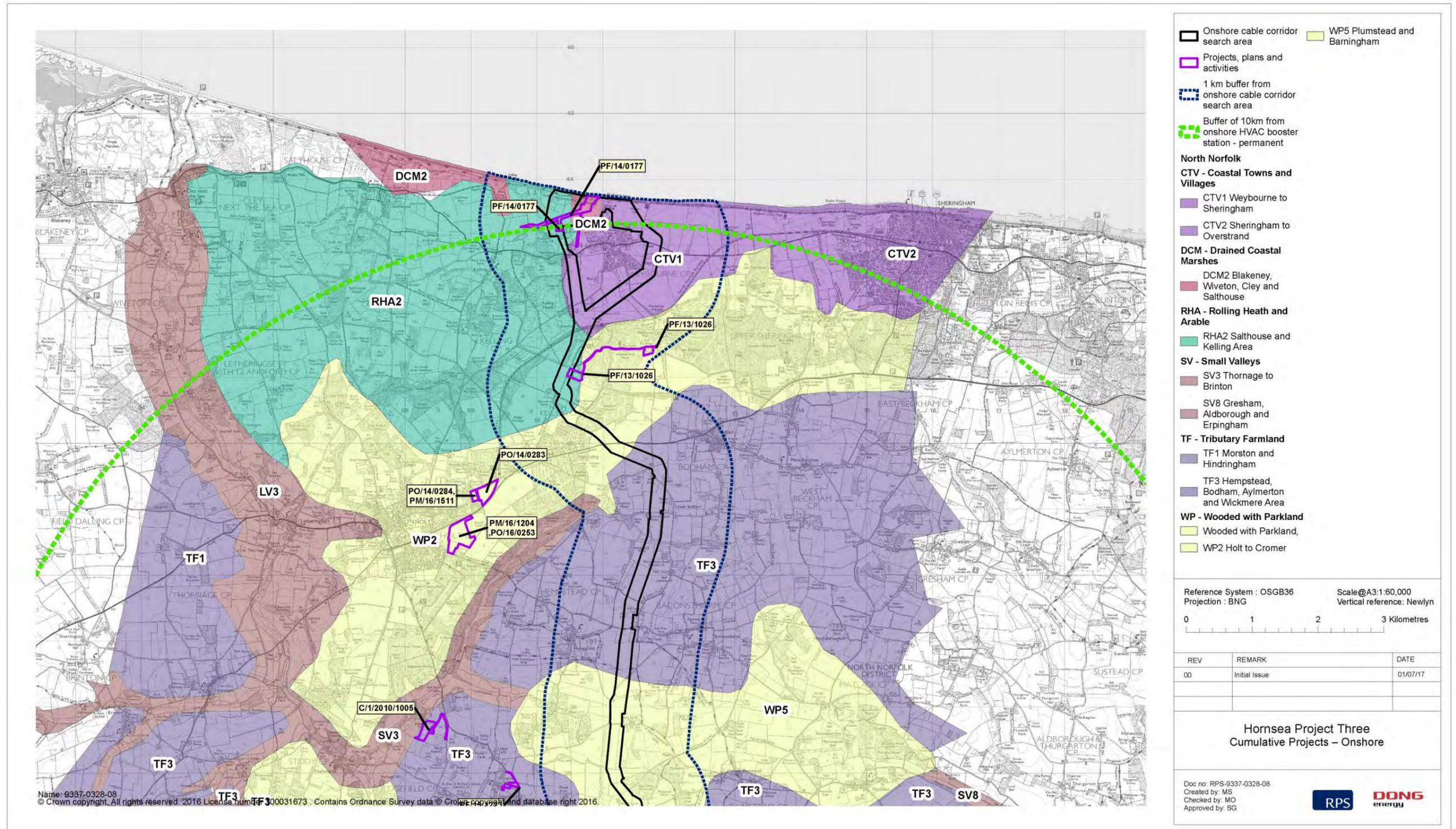


Figure 4.14: Cumulative Projects

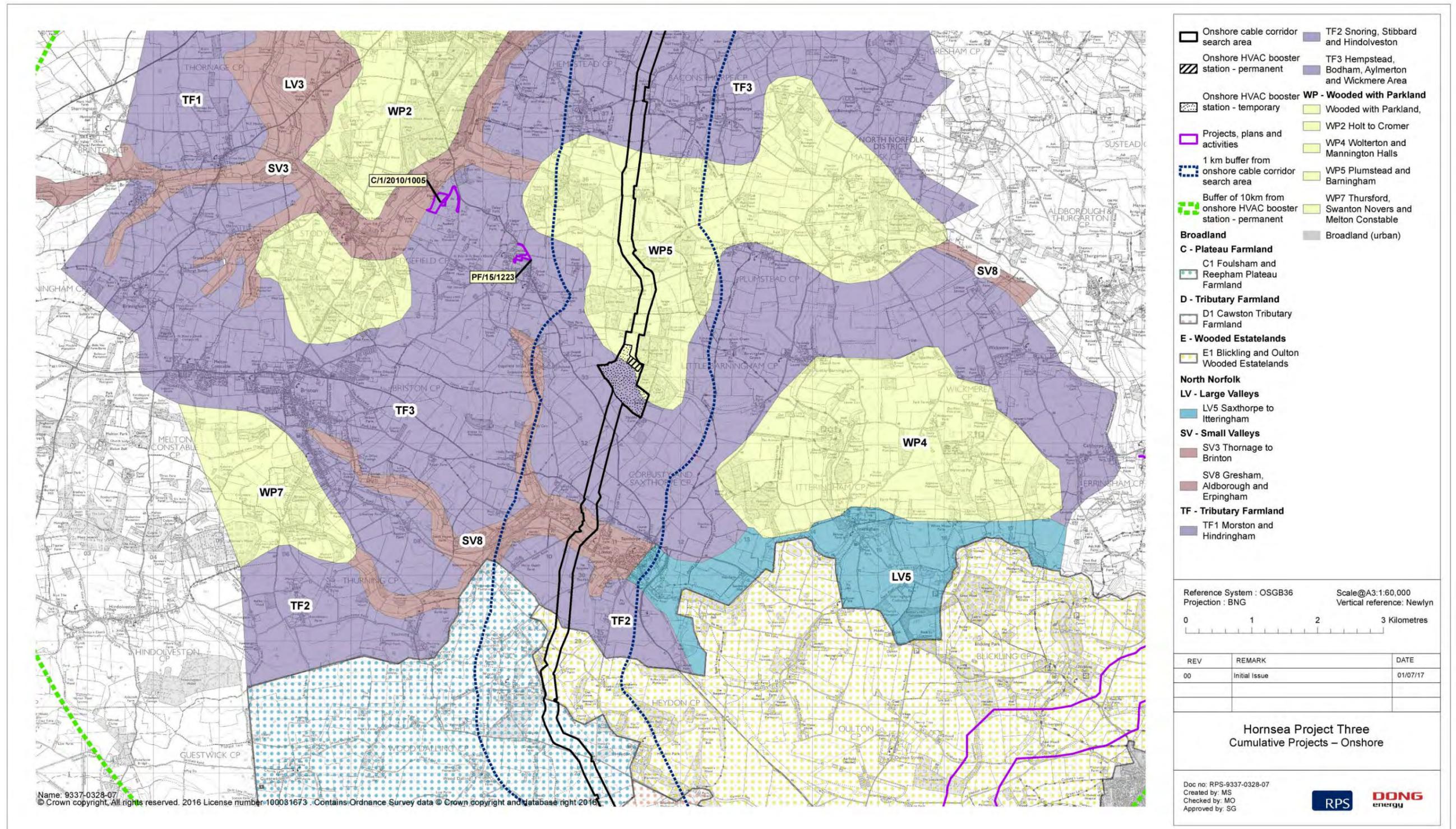


Figure 4.14: Cumulative Projects

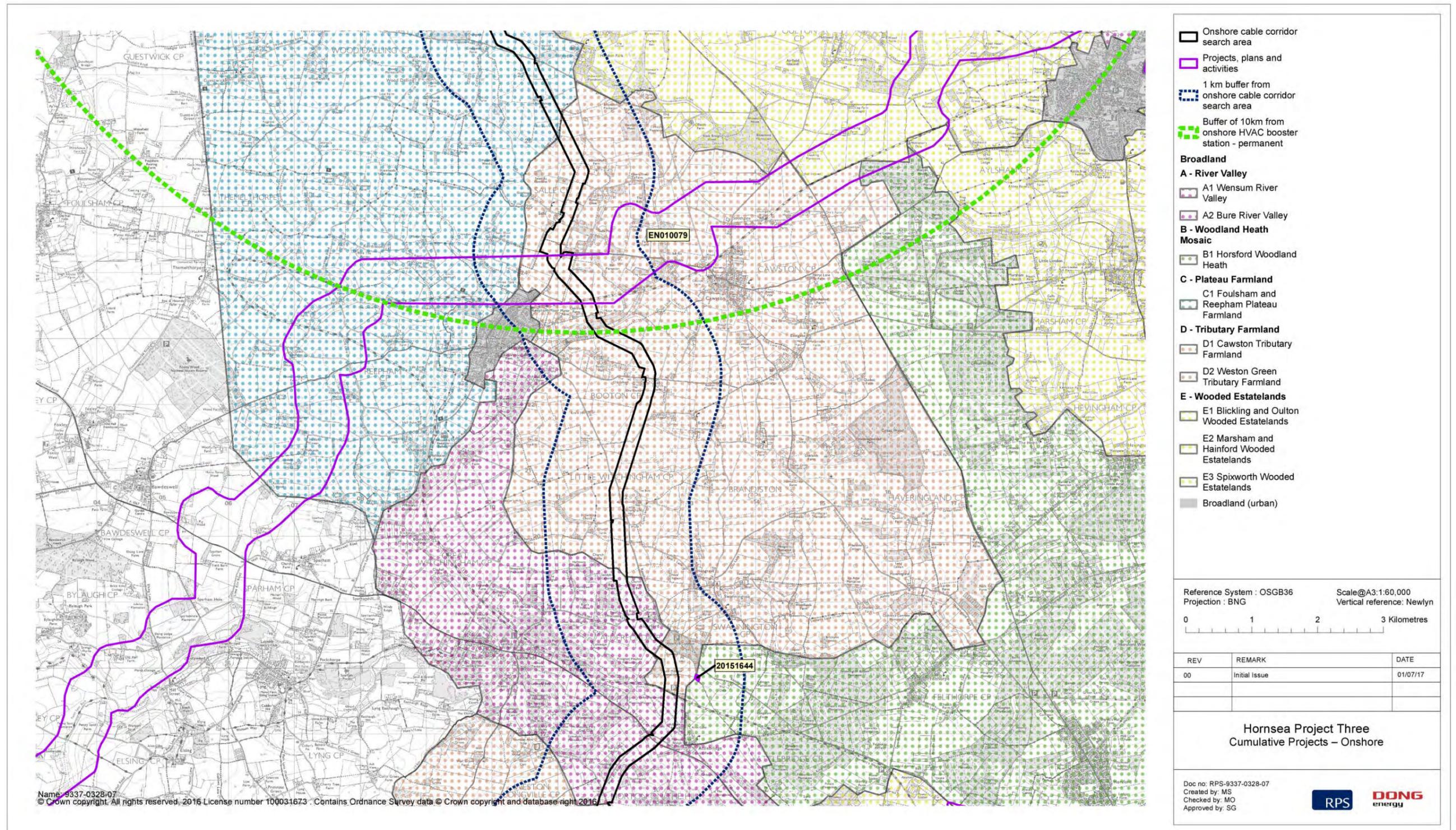


Figure 4.14: Cumulative Projects

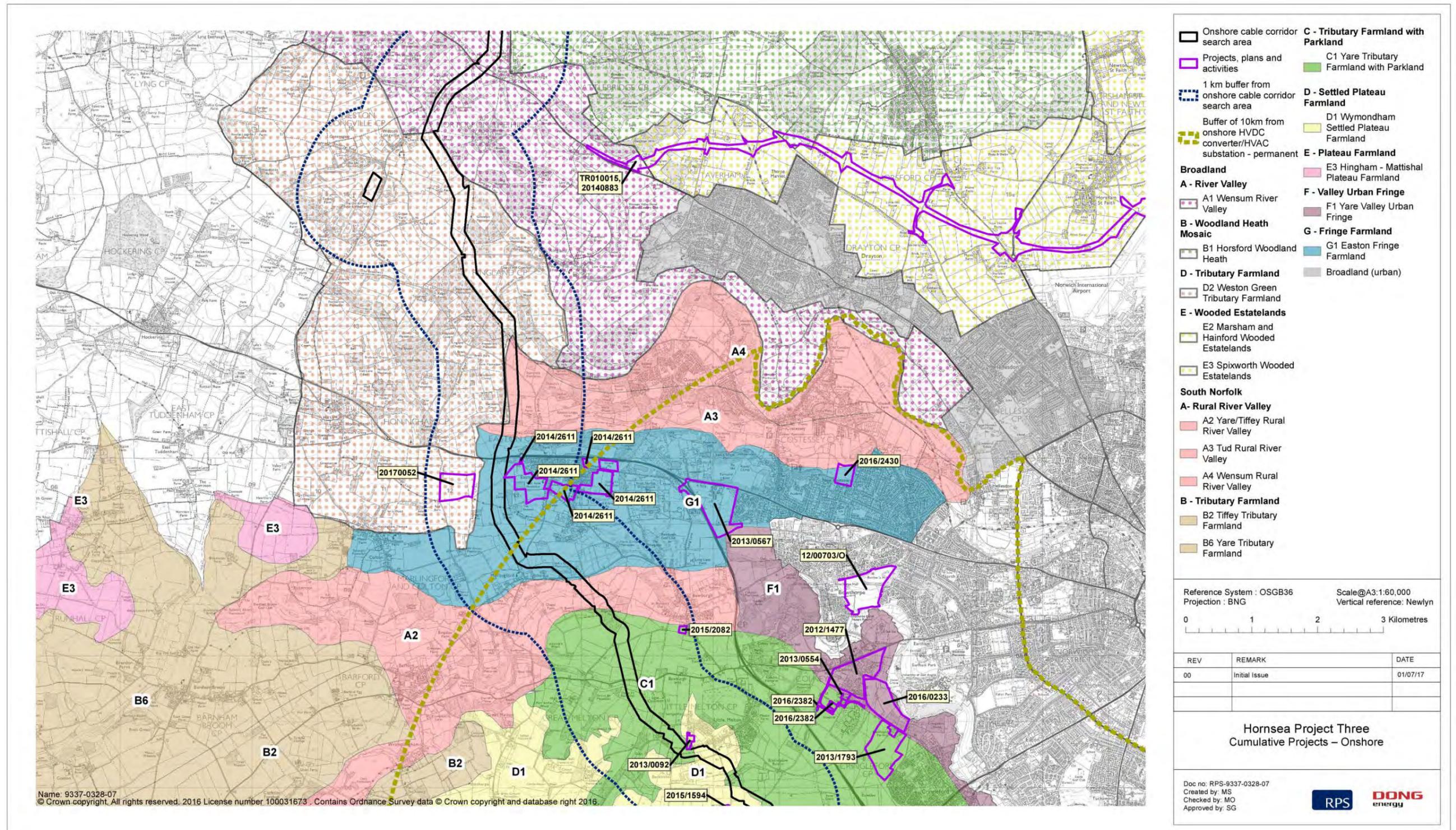
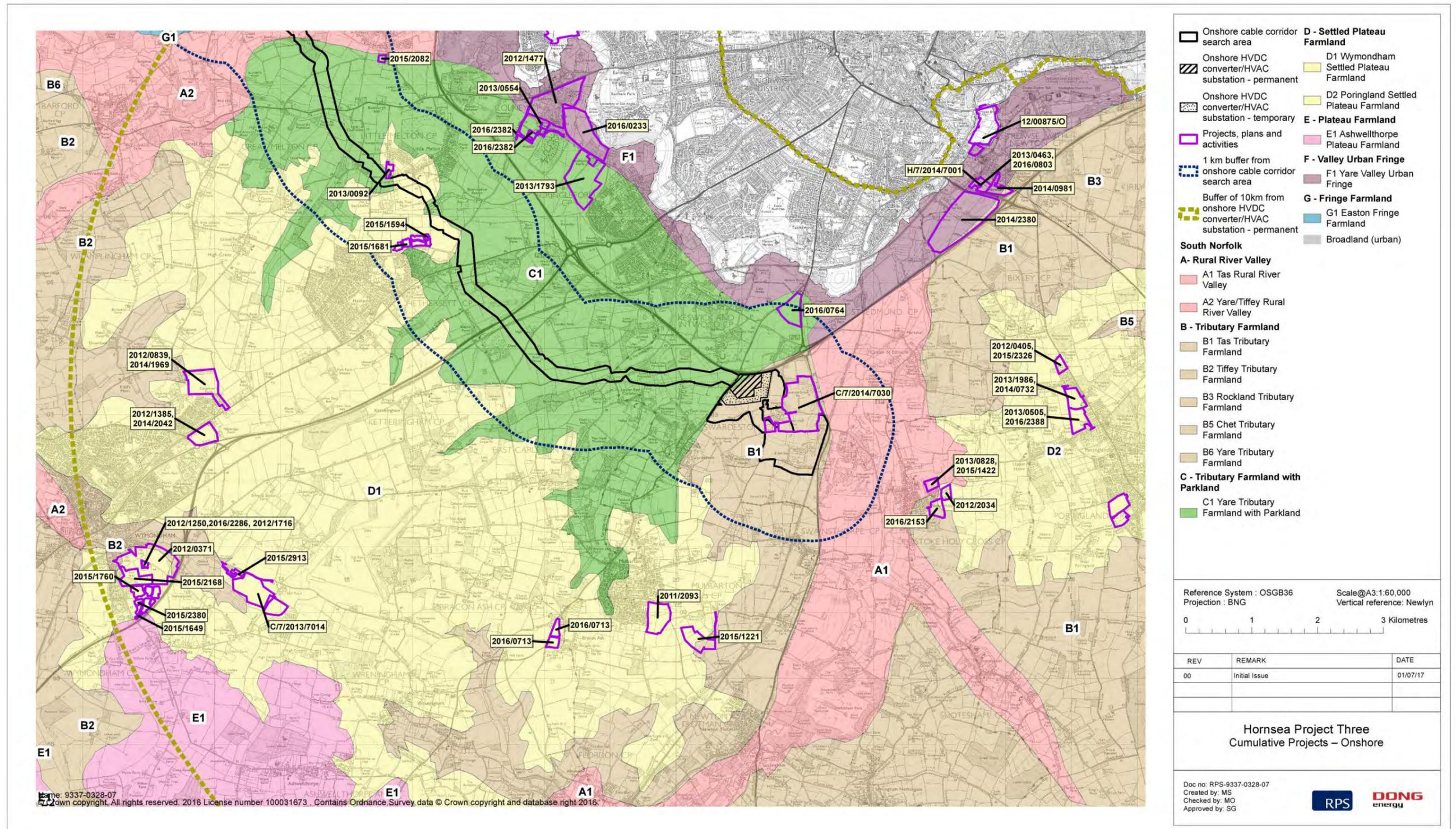


Figure 4.14: Cumulative Projects



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Figure 4.14: Cumulative Projects

Table 4.11: List of other projects and plans considered within the CEA.

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase	
1	<i>Residential</i>							
	Construction and operation and maintenance phases	PF/15/1223 - Land off Rectory Road and Holt Road, Edgefield	Onshore cable corridor 1.4 km Onshore HVAC booster station 2.1 km	Erection of twenty two residential units (Class C3) with associated highway and landscape works.	2020 to 2022	Yes	Yes	
	Construction and operation and maintenance phases	PF/15/1587- Land to the south of, Eagle Road, Erpingham	Onshore HVAC booster station 7.7 km	Erection of 10 dwellings and garages with access off Eagle Road.	2020 to 2021	Yes	Yes	
	Construction and operation and maintenance phases	PF/15/1461- Land off Eagle Road, Erpingham	Onshore HVAC booster station 8.2 km	Erection of twenty four residential units (Class C3) with associated highway and landscape works.	2020 to 2022	Yes	Yes	
	Operation and maintenance phase	PM/16/1511 - Land south of Cromer Road and west of Grove Lane, Holt	Onshore cable corridor 1.7 km Onshore HVAC booster station 6.2 km	Reserved matters of appearance, scale, layout and landscaping for the erection of 17 dwellings, garages and associated works in respect of Outline Planning Permission PO/14/0284.	2019 to 2020	No	Yes	
	Construction and operation and maintenance phases	PM/16/1204 - Land to the north of Hempstead Road, Heath Farm, Holt	Onshore cable corridor 2 km Onshore HVAC booster station 5.6 km	Reserved matters submission of appearance, landscaping, layout and scale; for erection of 214 dwellings, public open space, highway and other infrastructure, in respect of outline planning application PO/16/0253.	2019 to 2025	Yes	Yes	
	Construction and operation and maintenance phases	PO/14/0283 - Land south of Cromer Road and East of Grove Lane, Holt	Onshore cable corridor 1.4 km Onshore HVAC booster station 6.1 km	Residential development for a maximum of 126 dwellings.	2017 to 2022	Yes	Yes	
	Construction and operation and maintenance phases	PO/14/0284- Land south of Cromer Road and West of Grove Lane, Holt (associated with PM/16/1511)	Onshore cable corridor 1.7 km Onshore HVAC booster station 6.2 km	Residential development for a maximum of 19 dwellings.	2017 to 2022	Yes	Yes	
	Construction and operation and maintenance phases	PO/16/0253 Land to the north of Hempstead Road, Heath Farm, Holt (associated with PM/16/1204)	Onshore cable corridor 2 km Onshore HVAC booster station 6.2 km	Erection of up to 215 dwellings, employment land (A3, A4, B1, B2, B8, C1, C2, D1 and D2 class uses), public open space and provision of roundabout and vehicular link road from Cromer Road (A148) to Heath Drive with associated landscaping and infrastructure (Outline application).	2018 to 2024	Yes	Yes	
	Construction and operation and maintenance phases	2015/2082 - Land south of Village Hall Stocks Hill, Bawburgh	Onshore cable corridor 759 m Onshore HVDC converter/HVAC substation 7.2 km	Outline application for the residential development 10 dwellings.	2021 to 2022	Yes	Yes	
Construction and operation and maintenance phases	2015/2326 - Land west of Octagon Farm, Bungay Road,	Onshore HVDC converter/HVAC substation 4.4 km	Reserved matters for appearance, landscaping and layout for 60 dwellings and 2 commercial units with associated external works in relation to outline permission 2012/0405/O.	2018 to 2020	No	Yes		

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase
	Construction and operation and maintenance phases	2016/0713 - Land to the east of Norwich Road, Bracon Ash	Onshore HVDC converter/HVAC substation 4.3 km	Erection of 52 dwellings, open space and associated works (Full application).	2021 to 2023	Yes	Yes
	Construction phase	2013/1793 - Land south-west of Newfound Farm, Colney Lane, Cringleford	Onshore cable corridor 1.6 km Onshore HVDC converter/HVAC substation 3.4 km	Outline planning permission for a development for up to 650 dwellings together with a small local centre, primary school with early years facility, two new vehicular accesses off Colney Lane, associated on-site highways, pedestrian and cycle routes, public recreational open space, allotments, landscape planting and community woodland.	2019 to 2027	Yes	Yes
	Construction and operation and maintenance phases	2015/1681 - Land north of Hethersett Village Centre, Little Melton Road, Hethersett	Onshore cable corridor 251 m Onshore HVDC converter/HVAC substation 5.1 km	Reserved matters for appearance, layout, scale and landscaping of the first phase of development for 126 dwellings in relation to outline permission 2011/1804.	2018 to 2029	Yes	Yes
	Construction and operation and maintenance phases	2015/1594 - Phase A1-A land north of Hethersett Village Centre, Little Melton Road, Hethersett	Onshore cable corridor 133 m Onshore HVDC converter/HVAC substation 5 km	Residential development of 95no dwellings with associated open space and infrastructure.	2018 to 2029	Yes	Yes
	Construction and operation and maintenance phases	2013/0092 - Land south of Ringwood Close, Little Melton	Onshore cable corridor 1 m Onshore HVDC converter/HVAC substation 6.1 km	Outline application for up to 20 residential units and associated highways works with all matters reserved.	2020 to 2021	Yes	Yes
	Construction and operation and maintenance phases	2011/2093 - Land east of Long Lane, Mulbarton	Onshore HVDC converter/HVAC substation 3.3 km	Development of 180 dwellings (Use Class C3), access, allotments, public open space and associated infrastructure.	2017 to 2021	Yes	Yes
	Construction and operation and maintenance phases	2016/2388 - Land north of Stoke Road, Poringland	Onshore HVDC converter/HVAC substation 4.7 km	Full planning application for up to 120 dwellings (Phase 2), senior recreation space, children's plays space and associated infrastructure.	2020 to 2023	Yes	Yes
	Operation and maintenance phase	2013/0505 - Land to the west of Norwich Road and north of Stoke Road, Poringland	Onshore HVDC converter/HVAC substation 4.7 km	Outline application for up to 100 dwellings with all matters reserved except for access on land to the west of Norwich Road and north of Stoke Road, Poringland, otherwise known as Heath farm, Poringland.	N/A	No	Yes
	Construction and operation and maintenance phases	2014/0732 - Land west of Norwich Road and south of Caistor Lane, Poringland	Onshore HVDC converter/HVAC substation 4.6 km	Reserved Matters application for 150 dwellings and associated appearance. Approval is sought for appearance, landscaping, layout and scale.	2017 to 2021	Yes	Yes
	Construction and operation and maintenance phases	2016/2430 - Land north of Farmland Road, Costessey	Onshore HVDC converter/HVAC substation 7.5 km	Outline application with access and Landscaping (all other matters reserved) for 83 dwellings (including 27 affordable dwellings) with areas of public open space, sustainable drainage systems and associated infrastructure.	2021 to 2024	Yes	Yes
	Operation and maintenance phase	2014/0393 - Land north of Shotesham Road, Poringland	Onshore HVDC converter/HVAC substation 5.7 km	Reserved Matters application for 57 dwellings and 3539m2 (GIA) office accommodation, associated parking and green spaces.	2018 to 2019	No	Yes
	Construction and operation and maintenance phases	2014/0319 - Land north of Shotesham Road (Area D) Poringland	Onshore HVDC converter/HVAC substation 5.6 km	Residential layout including all house details and landscaping for next phase following planning permission 2011/0476/O.	2017 to 2024	Yes	Yes

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase
	Operation and maintenance phase	2013/1986 - Land to the west of Norwich Road and south of Caistor Lane, Poringland	Onshore HVDC converter/HVAC substation 4.6 km	Outline application with all matters reserved except for access for the construction of up to 150 dwellings and associated infrastructure.	N/A	No	Yes
	Operation and maintenance phase	2016/2153 - Land off Broomfield Road Broomfield Road, Stoke Holy Cross	Onshore cable corridor 1.8 km Onshore HVDC converter/HVAC substation 3.1 km	(i) Construction of 53 dwellings (including 17 affordable units), access road, parking, garaging, footpaths and cycle paths walling and fencing, landscaping, public open space and associated infrastructure (ii) change of use of former agricultural land to provide extended primary school grounds and construction of 1.8 m high perimeter fence, pedestrian access, and associated hard and soft landscaping.	2019 to 2020	No	Yes
	Operation and maintenance phase	2015/1422 - Land north of Long Lane, Stoke Holy Cross	Onshore cable corridor 1.6 km Onshore HVDC converter/HVAC substation 2.9 km	Reserved Matters for application 2014/2409/RVC - appearance and scale of houses, site layout and soft and hard landscaping.	2018 to 2019	No	Yes
	Operation and maintenance phase	2013/0828 - Land north of Long Lane, Stoke Holy Cross	Onshore cable corridor 1.6 km Onshore HVDC converter/HVAC substation 2.9 km	An outline application erection of 24 dwellings and associated vehicular access, allotments, public amenity land and community car parking.	N/A	No	Yes
	Operation and maintenance phase	2012/2034 - Land east of Hillcrest Long Lane, Stoke Holy Cross	Onshore cable corridor 1.9 km Onshore HVDC converter/HVAC substation 3.1 km	New access to land adjacent to Long Lane, provision of 50 houses, road and car park.	N/A	No	Yes
	Construction and operation and maintenance phases	2014/0981 - Land south of Devon Way And Hudson Avenue, Trowse	Onshore HVDC converter/HVAC substation 4.4 km	Outline planning permission for residential development, associated external works and amenity areas (with an area of land set aside for future primary school use).	2019 to 2023	Yes	Yes
	Construction and operation and maintenance phases	2016/0803 - Land north of the A146 and east of White Horse Lane, Trowse	Onshore HVDC converter/HVAC substation 4.2 km	Submission of Reserved Matters pursuant to outline planning permission ref 2013/0463/O - appearance, scale, landscaping and layout: 85 no. dwellings and associated works.	2019 to 2023	Yes	Yes
	Operation and maintenance phase	2013/0463 - Land off White Horse Lane, Trowse	Onshore HVDC converter/HVAC substation 4.2 km	Proposed development of up to 99 dwellings including a 1 ha site for new Primary School (revised application).	N/A	No	Yes
	Operation and maintenance phase	2012/1385 - Land Between the A11 Spinks Lane and Norwich Road, Wymondham	Onshore HVDC converter/HVAC substation 7.8 km	Outline application for residential development with all matters reserved.	2017 to 2021	Yes	Yes
	Unknown	2012/1250 - Barkers Mill Bocm Pauls Ltd Right Up Lane, Silfield, Wymondham	Onshore HVDC converter/HVAC substation 9.2 km	Request for Screening Opinion in respect of demolition of mill buildings and erection of 14 dwellings.	Unknown	Unknown	Unknown
<i>Sport, leisure and tourism</i>							

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase
	Operation and maintenance	PF/13/1026 - Kelling Heath Holiday Park, Sandy Hill Lane, Weybourne, Holt	Onshore cable corridor 0 m Onshore HVAC booster station 7.6 km	Creation of 20 hard standings (former rally field Area A) for the siting of 20 woodland lodges with associated access and infrastructure. Demolition of chicken sheds (Area B), change of use of land and creation of hard standings for the siting of 17 static caravans with associated access and infrastructure.	2017 to 2018	No	Yes
	Construction and operation and maintenance phases	2016/0233 - UEA Sports Facility, Colney Lane, Colney	Onshore HVDC converter/HVAC substation 3.8 km	New sports pitches (including an artificial grass pitch with fencing and floodlighting), re-profiling of existing pitches, infilling/re-profiling of area used as existing grounds maintenance facility; new pavilion/club house (GIA: 1306 sqm), incorporating a café, changing rooms, club room, bar and members lounge; associated new car/coach/cycle parking areas (168 car parking spaces and overflow parking for up to 60 cars, including 8 parking spaces for the disabled, 100 cycle spaces and 2 coach parking spaces); new freestanding grounds/sports equipment storage facility (GIA: 144 sqm) and associated compound; access road (utilising the existing access junction onto Colney Lane), new footpath/cycle ways; extension of the existing Colney Lane car park (from 37 to 87 spaces and overflow parking for up to 24 cars); associated infrastructure (including utility equipment) and the temporary siting of a storage unit for sports/grounds equipment (for the period up to the opening of the grounds/sports equipment storage facility) at the UEA Sports Pitches, Colney Lane, Norwich.	2019 to 2021	Yes	Yes
	Operation and maintenance phase	2015/2168 - Land west of Rightup Lane, Wymondham	Onshore HVDC converter/HVAC substation 9.2 km	Reserved Matters for Phase 1 of development following planning consent 2012/0371 - Development of 153 Residential Dwellings, Access, Public Open Space and associated Infrastructure.	N/A	No	Yes
	Construction and operation and maintenance phases	2014/1969 - Land north-west of Carpenters Farm, Norwich Common, Wymondham	Onshore HVDC converter/HVAC substation 7.6 km	Reserved matters application (following outline planning permission 2012/0839/O) for residential development of 217 dwellings, including details of appearance, landscaping, layout and scale.	2017 to 2022	Yes	Yes
	Operation and maintenance phase	2012/0839 - Land north-west of Carpenters Farm, Norwich Common, Wymondham	Onshore HVDC converter/HVAC substation 7.6 km	Proposed residential development (Class C3) up to 350 dwellings with associated access on Land at Carpenters Barn, Norwich Common, and Wymondham. To include the infrastructure associated with the residential development, public open space and new vehicular and pedestrian access routes.	N/A	No	Yes
	Operation and maintenance phase	2016/2286 - Barkers Mill Rightup Lane, Wymondham	Onshore HVDC converter/HVAC substation 9.2 km	Reserved Matters relating to planning permission 2012/1716 (14 dwellings) - Access, appearance, scale, landscaping, layout and material details.	2019	No	Yes
	Operation and maintenance phase	2015/2380 - Land north of the A11 Silfield Road, Wymondham	Onshore HVDC converter/HVAC substation 9.2 km	Proposed development for 150 new dwellings including parking, garages, road infrastructure and green infrastructure.	N/A	No	Yes
	Operation and maintenance phase	2015/1760 - Land north of the A11 Silfield Road, Wymondham	Onshore HVDC converter/HVAC substation 9.4 km	Proposed development for 90 new dwellings including parking, garages, road infrastructure, drainage and green infrastructure.	N/A	No	Yes

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase
	Operation and maintenance phase	2015/1649 - Land north of the A11 Silfield Road, Wymondham	Onshore HVDC converter/HVAC substation 9.3 km	Residential development of 129 dwellings with details for Appearance, Landscape, Layout and Scale.	N/A	No	Yes
	Operation and maintenance phase	2014/2042 - Land between the A11 Spinks Lane and Norwich Road, Wymondham	Onshore HVDC converter/HVAC substation 7.8 km	Reserved matters application (following outline planning permission 2012/1385/O) for residential development - Access, appearance, landscaping, layout and scale.	N/A	No	Yes
	Operation and maintenance phase	2012/1716 - Barkers Mill Rightup Lane, Wymondham	Onshore HVDC converter/HVAC substation 9.2 km	Outline application for construction of 14 dwellings.	N/A	No	Yes
	Construction and operation and maintenance phases	20151644 – 1-4 Station Road, Swannington, Attlebridge	Onshore cable corridor 249 m	Demolition of 4 Existing Units and Development of 10 Residential Units, Together with Associated Access (Outline).	2022 to 2023	Yes	Yes
	Construction and operation and maintenance phases	20140298 – Land north of Sir Wouldiams Lane, Aylsham	Onshore HVAC booster station 10.4 km	Development of up to 300 Dwellings, Access, Public Open Space, Allotments & Associated Infrastructure & Provision of a Car Park & Enclosure of Land for Education & Recreational Purposes as Part of the Transfer of Land to Aylsham High School (Reserved Matters).	2017 to 2022	Yes	Yes
Energy and infrastructure							
	Operation and maintenance phase and decommissioning	PF/14/0177 - Agricultural Land at Weybourne Hope	Onshore cable corridor 0 m Onshore HVAC booster station 7.4 km	Installation of landfall transition pit and buried electrical cable system (revisions to previously approved scheme) and changes to the construction configuration at the landfall, for Dudgeon Offshore Wind Farm.	2018 to 2019	No	Yes
	Operation and Decommissioning	TR010015 - A47 at Postwick, east of Norwich, to the A1067 Fakenham Road north of Taverham	Onshore cable route 1.9 km Onshore HVDC converter/HVAC substation 8.5 km	The Norwich Northern Distributor Road (NDR) is a 20km dual carriageway road under construction to run from the A47 at Postwick, east of Norwich, to the A1067 Fakenham Road north of Taverham.	2017 to 2018	No	Yes
	Operation and maintenance phase	2015/1221 - Land south of Brick Kiln Lane, Mulbarton	Onshore HVDC converter/HVAC substation 3.3 km	Installation and operation of a solar farm and associated infrastructure, including photovoltaic panels, mounting frames, inverters, transformers, substations, communications building, fence and pole mounted security cameras, for the life of the solar farm.	2017	No	Yes
	Construction and operation and maintenance phases	2016/2382 - Land adjacent to Norfolk and Norwich University Hospital, Colney Lane	Onshore cable corridor 1.5 km Onshore HVDC converter/HVAC substation 4.5 km	Reserved matters following 2012/1880/O - Construction of a four storey car park, internal access roads, two roundabouts and associated road works on Hethersett Lane.	2017 to 2026	Yes	Yes
	Construction and operation and maintenance phases	2014/0562 - Land south of Hall Farm Bungay Road, Tasburgh	Onshore HVDC converter/HVAC substation 7.7 km	Installation of a solar PV array plus ancillary development.	2017	No	Yes
	Construction and operation and maintenance phases	2015/2913 - Oil Storage Depot Stanfield Road, Wymondham	Onshore HVDC converter/HVAC substation 7.5 km	Installation of anaerobic digestion plant to produce biogas with two digesters, holding clamps, use of existing fuel tanks for digestate storage, gas compressor and cleaner and underground pipeline to gas grid.	2020 to 2021	Yes	Yes
	Operation and maintenance phase	2014/2380 - Land east of White Horse Lane, Trowse, Bixley	Onshore HVDC converter/HVAC substation 4.3 km	Development of a ground mounted solar farm including associated infrastructure which includes inverters and transformers and a substation.	2017	No	Yes

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase
	Construction and operation and maintenance phases	C/1/2010/1005 - Land adjacent to Edgefield Landfill Site, Edgefield, Melton Constable	Onshore HVAC booster station 3.4 km	Erection of plant to accommodate an anaerobic digestion facility, provision of ancillary office and weighbridge, retention of existing landfill gas engines, construction of access road and provision of landscaping.	Unknown	Unknown	Unknown
<i>Mixed use</i>							
	Construction	2014/2611 - Land north and south of Dereham Road, Easton	Onshore cable corridor 0 m Onshore HVDC converter/HVAC substation 9.4 km	The erection of 890 dwellings; the creation of a village heart to feature an extended primary school, a new village hall, a retail store and areas of public open space; the relocation and increased capacity of the allotments; and associated infrastructure including public open space and highway works.	2018 to 2028	Yes	Yes
	Operation and maintenance phase	2012/0405 - Land west of Octagon Farm Bungay Road, Bixley	Onshore HVDC converter/HVAC substation 4.4 km	Application for outline planning permission for mixed use development for community, residential and commercial uses and associated external works. A new electricity substation, new pumping station, SUDS (including pond) and open spaces are included in the proposal.	2018 to 2020	No	Yes
	Construction	2013/0567 - Lodge Farm Phase 2 Development, Dereham Road, Costessey	Onshore cable corridor 1.9 km Onshore HVDC converter/HVAC substation 7.8 km	FULL application for 495 dwellings, associated infrastructure, open space and allotments and OUTLINE permission for reserve site for a single form entry school, small convenience store, sports pavilion including changing facilities, small meeting room, associated parking, demolition of 4 dwellings and associated farm buildings (Amended 27/01/14).	2018 to 2027	Yes	Yes
	Construction and operation and maintenance phases	2012/0371 - Land to the east and west of Rightup Lane, Wymondham	Onshore HVDC converter/HVAC substation 8.8 km	Mixed use development of up to 730 dwellings, up to 128 bed care home / homes (in one or two buildings), up to 250 square metres of retail / commercial floor space, a new primary school together with all other associated temporary and permanent infrastructure and green infrastructure, including new access arrangements, sports pitches, allotments and community orchard.	2018 to 2026	Yes	Yes
	Construction	12/00703/O – Three Score Site land south of Clover Hill Road, Norwich	Onshore HVDC converter/HVAC substation 5.7 km	Redevelopment of site with up to 1000 homes, including affordable housing, care home, a new village centre including at least one local shop, public open space and associated roads and infrastructure.	2017 to 2029	Yes	Yes
	Construction	12/00875/O – Deal Ground, Bracondale, Norwich	Onshore HVDC converter/HVAC substation 4.6 km	Outline planning application (full details of access) for a mixed development consisting of a maximum of 670 dwellings; a local centre comprising commercial uses (A1/A2/A3): a restaurant/dining quarter and public house (A3/A4); demolition of buildings on the May Gurney site (excluding the former public house); an access bridge over the River Yare; new access road; car parking; flood risk management measures; landscape measures incl. earthworks to form new swales and other biodiversity enhancements including the re-use of the Grade II Listed brick Kiln for use by bats.	2024 to 2029+	Yes	Yes
<i>Employment, office, laboratory and research facilities</i>							

Tier	Phase	Project/Plan	Distance from Hornsea Three if within CEA study areas	Details	Date of Construction (if applicable)	Overlap of construction phase with Hornsea Three construction phase	Overlap of operation phase with Hornsea Three operation phase	
	Construction and operation and maintenance phases	2012/1477 - Norwich Research Park, Colney Lane	Onshore cable corridor 1.9 km Onshore HVDC converter/HVAC substation 4.6 km	Outline application for new offices and laboratories for research and development activities along with ancillary and complimentary uses with access from Colney Lane and Hethersett Lane and all other matters reserved. Demolition and reprovision of existing buildings. Associated car parking, infrastructure, internal access roads, landscaping and cycle parking.	2017 to 2026	Yes	Yes	
	Construction	2013/0554 - Norfolk and Norwich University Hospital, Colney Lane	Onshore cable corridor 1.8 km Onshore HVDC converter/HVAC substation 4.5 km	Proposed reserved matters application to approved 2012/1880/O - Proposed Norwich Medical Research building, associated car parking and internal access roads, site infrastructure and on-site landscaping.	2018 to 2029+	Yes	Yes	
	Construction and operation and maintenance phases	2016/0764 - Land west of Ipswich Road, Keswick	Onshore cable corridor 736 m Onshore HVDC converter/HVAC substation 865 m	Outline Application for Proposed employment development consisting of B1, B2 and B8 uses, associated access and landscaping; and proposed link road between the A140 and the B1113 with some matters reserved.	2021 to 2023	Yes	Yes	
	Retail							
	Construction and operation and maintenance phases	20170052 – Land off Church Lane, Honingham	Onshore cable corridor 252 m	Greater Norwich Food Enterprise Zone.	Unknown	Unknown	Yes	
	Education							
	Construction and operation and maintenance phases	H/7/2014/7001 - White Horse Lane, Trowse	Onshore HVDC converter/HVAC substation 4.4 km	New Primary School.	Unknown	Unknown	Unknown	
	Extraction and quarrying							
	Construction and operation and maintenance phases	C/7/2014/7030 - Mangreen Quarry, Swardeston, Norwich	Onshore cable corridor 0 m Onshore HVDC converter/HVAC substation 361 m	(I) For a southern extension to Mangreen Quarry and ancillary works with progressive restoration to agriculture and nature conservation by the importation of inert restoration materials; (II) Retention of existing consented facilities at Mangreen Quarry; (III) Establishment of crossing point over Mangreen Lane; and (IV) Proposed variation to approved restoration scheme at Mangreen Quarry.	2019 to 2024	Yes	Yes	
	Operation and maintenance phase	C/7/2013/7014 - Land at Hall Farm, Stanfield Road, Wymondham	Onshore HVDC converter/HVAC substation 7.5 km	Mineral extraction, processing and associated activities with importation of inert material and restoration to agriculture and two small ponds.	N/A	No	Yes	
2	Energy and Infrastructure							
	Construction, operation and maintenance and decommissioning phases	EN010079 - Norfolk Vanguard Offshore Wind Farm	Onshore cable corridor 0 m Onshore HVAC booster station 7.4 km	Norfolk Vanguard is a proposed offshore windfarm with an approximate capacity of 1800 MW off the coast of Norfolk.	2020 to 2024	Yes	Yes	
3	No Tier 3 Schemes Identified							

4.14.3 Maximum design scenario

- 4.14.3.1 The maximum design scenarios identified in Table 4.12 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative impact presented and assessed in this section have been selected from the details provided in the Hornsea Three project description (volume 1, chapter 3: Project Description), as well as the information available on other projects and plans, in order to inform a 'maximum design scenario', under which, all schemes presented would occur simultaneously. Effects of greater significance are not predicted to arise should any other development scenario, based on details within the project Design Envelope (e.g. different turbine layout), to that assessed here be taken forward in the final design scheme.
- 4.14.3.2 A number of schemes lie within the CEA study areas for the onshore cable corridor, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation. Those that are separated from the proposed onshore infrastructure by distance, physical boundaries, such as substantial built up areas, and are in different character areas have been excluded from further assessment, as there would be no noticeable cumulative landscape or visual impacts. Those schemes that might have a greater impact on one or more receptors have been included in the further assessment and are set out in Table 4.12 below.

Table 4.12: Maximum design scenario considered for the assessment of potential cumulative impacts on Landscape and Visual Resources.

Potential impact	Maximum design scenario	Justification
<i>Construction Phase</i>		
<p>Intertidal</p> <p>The temporary impact of the construction works in the intertidal area may affect landscape and seascape receptors and change the character of designated and undesignated landscape and seascape resources, directly and indirectly.</p> <p>The temporary impact of the construction works in the intertidal area may directly affect the views of specific visual receptors, e.g. residential views and users of Public Rights of Way, or change the nature of the visual resources of the area.</p>	None	N/A

Potential impact	Maximum design scenario	Justification
<p>Onshore Cable Corridor</p> <p>The temporary impact of the construction works along the onshore cable corridor may affect designated and non-designated landscape and seascape resources, directly and indirectly.</p> <p>The temporary impact of the construction works along the onshore cable corridor may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> 20151644 TR010015 20170052 2014/2611 (group of five schemes) 2015/2082 2013/0092 2015/1594 2015/1681 2016/0764 C/7/2014/7030 <p>Tier 2</p> <ul style="list-style-type: none"> EN010079 	<p>The construction phases of these schemes potentially overlap with the construction phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
<p>Compounds and Side Accesses</p> <p>The temporary impact of the construction of the compounds and side accesses may affect designated and non-designated landscape and seascape resources, directly and indirectly.</p> <p>The temporary impact of the construction of the compounds and side accesses along the onshore cable corridor may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> 20151644 TR010015 20170052 2014/2611 2015/2082 2013/0092 2015/1594 2015/1681 2016/0754 C/7/2014/7030 <p>Tier 2</p> <ul style="list-style-type: none"> EN010079 	<p>The construction phases of these schemes potentially overlap with the construction phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
<p>Onshore HVAC Booster Station</p> <p>The temporary impact of the construction of the onshore HVAC booster stations may affect designated and non-designated landscape resources, directly and indirectly.</p> <p>The temporary impact of the construction works of the onshore HVAC booster stations may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> C/1/2010/1005 PF/15/1223 	<p>The construction phases of these schemes potentially overlap with the construction phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>

Potential impact	Maximum design scenario	Justification
<p>Onshore HVDC Converter/HVAC Substation</p> <p>The temporary impact of the construction works of the onshore HVDC converter/HVAC substation may affect designated and non-designated landscape resources, directly and indirectly.</p> <p>The temporary impact of the construction works of the onshore HVDC converter/HVAC substation may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> • 2014/2611 (group of five schemes) • 2013/0567 • 12/00703/O • 2015/2082 • 2012/1477 • 2013/0554 • 2016/2382 • 2016/0233 • 2013/1793 • 2013/0092 • 2015/1594 (group of four schemes) • 2015/1681 • C/7/2014/7030 • H7/2014/7001 • 2014/0981 • 2016/0713 (group of two schemes) • 2011/2093 	<p>The construction phases of these schemes potentially overlap with the construction phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
Operation and maintenance phase		
<p>Intertidal</p> <p>The impact of the onshore cable corridor during the operation phase in the intertidal area may directly and indirectly affect designated and non-designated landscape and seascape resources.</p> <p>The impact of the onshore cable corridor during the operation phase in the intertidal area may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> • PF/14/0177 	<p>The operation and maintenance phase of this scheme overlaps with the operation and maintenance phase of Hornsea Three. When considering this scheme in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
<p>Onshore Cable Corridor</p> <p>The impact of the onshore cable during the operation phase may directly and indirectly affect designated and non-designated landscape and seascape resources.</p> <p>The impact of the onshore cable during the operation and maintenance phase may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> • PF/140/0177 • PF/13/1026 • 20151644 • TR010015 • 20170052 • 2014/2611 • 2015/2082 • 2013/0092 • 2015/1594 • 2015/1681 • 2016/0754 • C/7/2014/7030 <p>Tier 2</p> <ul style="list-style-type: none"> • EN010079 	<p>The operation and maintenance phase of these schemes overlap with the operation and maintenance phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>

Potential impact	Maximum design scenario	Justification
<p>Onshore HVAC Booster Station</p> <p>The impact of the onshore HVAC booster stations during the operation phase may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of the onshore HVAC booster stations during the operation and maintenance phase may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> • C/1/2010/1005 • PF/15/1223 	<p>The operation and maintenance phase of these schemes overlap with the operation and maintenance phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
<p>Onshore HVDC Converter/HVAC Substation</p> <p>The impact of the onshore HVDC converter/HVAC substation during the operation phase may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of the onshore HVDC converter/HVAC substation during the operation phase may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> • 2014/2611 (group of five schemes) • 2013/0567 • 12/00703/O • 2015/2082 • 2012/1477 • 2013/0554 • 2016/2382 • 2016/0233 • 2013/1793 • 2013/0092 • 2015/1594 (group of four schemes) • 2015/1681 • C/7/2014/7030 • 12/00875/O • 2013/0463 • H7/2014/7001 • 2014/0981 • 2014/2380 • 2016/0713 (group of two schemes) • 2011/2093 • 2015/1221 • 2014/0562 (group of two schemes) 	<p>The operation and maintenance phase of these schemes overlap with the operation and maintenance phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
Decommissioning phase		
<p>Intertidal</p> <p>The impact of decommissioning the cables in the intertidal area may directly and indirectly affect designated and non-designated landscape and seascape resources.</p> <p>The impact of decommissioning the onshore cable in the intertidal area may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> • PF/14/0177 	<p>The decommissioning phase of this scheme may overlap with the decommissioning phase of Hornsea Three. When considering this scheme in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>

Potential impact	Maximum design scenario	Justification
<p>Onshore Cable Corridor</p> <p>The impact of decommissioning the onshore cable corridor may directly and indirectly affect designated and non-designated landscape and seascape resources.</p> <p>The impact of decommissioning the onshore cable corridor may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> PF/140/0177 <p>Tier 2</p> <ul style="list-style-type: none"> EN010079 	<p>The decommissioning phase of these schemes may overlap with the decommissioning phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
<p>Onshore HVAC Booster Station</p> <p>The impact of decommissioning the onshore HVAC booster station may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of decommissioning the onshore HVAC booster station may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> PF/140/0177 <p>Tier 2</p> <ul style="list-style-type: none"> EN010079 	<p>The decommissioning phase of these schemes may overlap with the decommissioning phase of Hornsea Three. When considering these schemes in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>
<p>Onshore HVDC Converter/HVAC Substation</p> <p>The impact of decommissioning the onshore HVDC converter/HVAC substation may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of decommissioning the onshore HVDC converter/HVAC substation may directly affect visual receptors.</p>	<p>Tier 1</p> <ul style="list-style-type: none"> C/7/2014/7030 	<p>The decommissioning phase of this scheme may overlap with the decommissioning phase of Hornsea Three. When considering this scheme in combination with Hornsea Three, there may be a cumulative effect on landscape and visual receptors.</p>

4.15 Cumulative Effect Assessment

4.15.1.1 This section comprises an assessment of the potential cumulative landscape and visual effects of the proposed Hornsea Three development in combination with Cumulative Schemes listed within Table 4.12 above. The potential significance of cumulative effects is detailed for three phases of development (where data is available); Construction Phase (overlap with Hornsea Three Construction), Operation and Maintenance Phase (during winter one year after completion of Hornsea Three) and Decommissioning Phase (estimated timeframes).

4.15.2 Construction Phase

4.15.2.1 The likely construction impacts of the Hornsea Three onshore infrastructure are set out section 4.11 of this chapter.

4.15.2.2 During the construction phase there would be localised direct impacts on landscape and visual resources and receptors that cannot be fully mitigated. However, many of these, sometimes significant, impacts are temporary, largely due to the scale of the cable route construction corridor.

4.15.2.3 Only those effects that are considered to have the potential to be significant are included as detailed assessments in this chapter, below. An assessment of the cumulative effects of the construction of the Hornsea Three infrastructure on all landscape and visual resources and receptors is set out in volume 6, annex 4.9: Cumulative Effects Assessment.

Cumulative impacts of Tier 1 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect designated landscapes and landscapes noted within planning policy, NSCAs, and NCAs.

4.15.2.4 There would be no significant cumulative effects upon designated landscapes, landscapes noted within planning policy, NSCAs or NCAs as a result of the construction phase of Hornsea Three in addition to Tier 1 projects.

Cumulative impacts of Tier 2 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect designated landscapes and landscapes noted within planning policy, NSCAs and NCAs.

Salle Park RPaG

Magnitude of impact

- 4.15.2.5 Salle Park lies less than 0.5 km to the east of the Hornsea Three onshore cable route and two proposed construction compounds. The proposed cable corridor for the Norfolk Vanguard West Offshore wind farm (EN010079) cuts through the eastern side of the RPaG and crosses the Hornsea Three cable corridor. The cumulative scheme has the potential to directly affect the fabric of the RPaG and influence the overall character of the parkland. The Hornsea Three cable corridor would not directly affect the RPaG however, the construction activities in close proximity to the garden would influence the perception of the wooded character in the wider rural landscape, although is unlikely to be visible from within the grounds. The cumulative impact is predicted to be of local spatial extent, short term duration, continuous and is reversible. It is predicted that the impact will affect the landscape context of the parkland and some intervisibility with the parkland. Therefore, the magnitude is considered to be **moderate**.

Sensitivity of Receptor

- 4.15.2.6 As a nationally designated landscape, Salle Park RPaG is of high susceptibility, medium reversibility and high value. Therefore, the sensitivity of the park is considered to be **high**.

Significance of the effect

- 4.15.2.7 Overall, it is predicted that the sensitivity of the receptor is considered to be **high** and the magnitude is deemed to be **moderate**. The cumulative effect will, therefore, be of **major adverse** significance, which is significant. The way the construction works are planned, and managed, will affect the significance of the impact. The selection of the final cable route, and the way it interacts with, and could be viewed from, Public Rights of Way, will be considered carefully when construction plans are further progressed.

Cumulative impacts of Tier 1 and Tier 2 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect NSCAs and NCAs.

- 4.15.2.8 The NSCAs and the NCAs that the Hornsea Three onshore infrastructure is situated in, or adjacent to, are: NSCA 7: East Midlands Coastal Waters; NSCA 9: Norfolk Coastal Waters; NCA 77: North Norfolk Coast; NCA78: Central North Norfolk; NCA 84 Mid Norfolk; and, NCA 83: South Norfolk and High Suffolk Claylands.

- 4.15.2.9 There would be no overall significant cumulative effects on NSCAs and NCAs during the construction phase of Hornsea Three, as the NSCAs and NSAs cover large areas and the developments, in relation to these areas' key characteristics, are a minor component.

Cumulative impacts of Tier 1 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect LCAs and visual resources.

- 4.15.2.10 No potential significant effects on LCAs were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. Lesser effects were identified and these are detailed in the full assessment of cumulative effects for Hornsea Three in volume 6, annex 4.7: Cumulative Effects Assessment.

Cumulative impacts of Tier 2 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect LCAs resources and receptors.

- 4.15.2.11 No potential significant effects on LCAs were identified during the assessment process that considered the magnitude of impact, sensitivity of receptors and significance of the effect. Lesser effects were identified and these are detailed in the full assessment of cumulative effects for Hornsea Three in volume 6, annex 4.7: Cumulative Effects Assessment.

Cumulative impacts of Tier 1 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect visual resources and receptors.

Intertidal area and landfall

- 4.15.2.12 The installation of a landfall transition pit and buried electrical cable system for the Dudgeon Offshore Wind Farm would be in the same location as the Hornsea Three onshore cable route. A length of the onshore cable route of the Dudgeon Offshore Wind Farm would also cross the Hornsea Three onshore cable corridor in the parish of Weybourne, including an area adjacent to the beach. Marine-based receptors and people using the beach at Weybourne will have near views of both schemes if constructed at the same time. Residents located in the north of Weybourne will also have more distant views of the construction activities of both schemes.

- 4.15.2.13 The impact is predicted to be of local spatial extent, short term duration, continuous and is reversible. It is predicted that the impact will affect views from the receptors directly. Therefore, the magnitude is considered to be **major** where receptors are located immediately adjacent to the activities.

Sensitivity of Receptor

- 4.15.2.14 Users of the beach and PRoWs within the AONB are receptors of high susceptibility, high reversibility and high value. Therefore, the sensitivity of the receptors is considered to be **high**.

Significance of Effect

- 4.15.2.15 Overall, it is predicted that the sensitivity of the receptor is considered to be high and the magnitude is deemed to be major. Therefore, the cumulative visual effect would be of **major adverse** significance, which is significant. The way the construction works are planned, and managed, will affect the significance of the impact. The selection of the final cable route, and the way it interacts with, and could be viewed from, Public Rights of Way, will be considered carefully.

Onshore HVDC converter/HVAC substation

- 4.15.2.16 Due to the scale of Mangreen Quarry and close proximity to the Hornsea Three onshore HVDC converter/HVAC substation it is considered that there would be a cumulative impact upon visual receptors within the local area. In particular, from the extensive PRow network around Swardeston, many of which are likely to be removed and/or diverted as a result of the schemes. Swardeston FP7 and BR9 are the closest PRowS, to the south of Hornsea Three and west of the quarry. There are likely to be significant cumulative effects upon views along the length of this PRow, with views of both schemes in combination when walking north and east from Swardeston. Occupiers of residential properties and farmsteads, particularly to the east of Swardeston would have views of both developments. Users of the Tas Valley Way Recreational Route, to the west of Swardeston, would have views of the construction of the Hornsea Three onshore cable route, the onshore HVDC converter/HVAC substation and quarry in combination.

Magnitude of Impact

- 4.15.2.17 The impact is predicted to be of local spatial extent, short term duration, continuous and is reversible. It is predicted that the impact will affect visual receptors directly. Therefore, the magnitude is considered to be **major**.

Sensitivity of Receptor

- 4.15.2.18 The residents and users of the PRowS are of a high susceptibility, high reversibility and high value. Therefore, the sensitivity of the receptors is considered to be **high**.

Significance of Effect

- 4.15.2.19 Overall, it is predicted that the sensitivity of the receptor is considered to be high and the magnitude is deemed to be major. Therefore, the effect would be of **major** adverse significance, which is significant. The way the construction works are planned, and managed, will affect the significance of the impact. The final site design, and views of it from Public Rights of Way, will be considered carefully.

Cumulative impacts of Tier 2 projects during the construction of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect visual resources and receptors.

Broadland District LCAs C1 and D1

- 4.15.2.20 The Norfolk Vanguard West cable route (EN010079) is part of a large scale NSIP, which crosses the Broadland district, to the north of Norwich. With a proposed construction period of 2020 to 2024 there is a potential four year overlap with that of the Hornsea Three cable route. The proposed route for the onshore cable crosses that of Hornsea Three to the north east of Reepham.

Magnitude of Impact

- 4.15.2.21 Due to the scale and close proximity to the Hornsea Three Cable Route it is considered that there would be a cumulative impact upon visual receptors within the local area. Particularly sequential views from the extensive PRow network to the north of Reepham. Many of the PRowS are likely to be diverted (temporarily) during the construction phase of both projects, e.g., footpath Salle FP8. Occupiers of many residential properties and farmsteads, particularly to the north and east of Reepham would likely have direct views of both developments. The impact is predicted to be of local spatial extent, short term duration, continuous and would be reversible. It is predicted that the impact would affect the receptor directly. Therefore, the magnitude is considered to be **moderate**.

Sensitivity of Receptor

- 4.15.2.22 People using the PRow network and residential receptors are of high susceptibility, high reversibility and high value. Therefore, the sensitivity of the LCAs is considered to be **high**.

Significance of Effect

- 4.15.2.23 There would be direct cumulative effects upon visual receptors as a result of the construction of the Hornsea Three onshore cable route and the construction of the Norfolk Vanguard West cable route. Overall, it is predicted that the sensitivity of the receptor is considered to be high and the magnitude is deemed to be moderate. Therefore, the cumulative visual effect will be of **major adverse** significance, which is significant. The way the construction works are planned, and managed, will affect the significance of the impact. The selection of the final cable route, and the way it interacts with, and could be viewed from, Public Rights of Way, will be considered carefully.

4.15.3 Operation and Maintenance Phase

Cumulative impacts of Tier 1 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect designated landscapes.

- 4.15.3.1 The assessment of potential landscape and visual cumulative effects upon nationally important designated landscapes during the construction phase is based on projects which have a temporal construction overlap with the Hornsea Three project (2021-2027) (see Table 4.11).

Cumulative impacts of Tier 2 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect designated landscapes.

- 4.15.3.2 There would be no cumulative impacts with Tier 2 projects during the operation and maintenance phase, as the Norfolk Vanguard West project would have been completed.

Cumulative impacts of Tier 1 and Tier 2 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect NSCAs and NCAs.

- 4.15.3.3 There would be no significant cumulative effects on NSCAs and NCAs during the operation and maintenance phase of Hornsea Three, as the NSCAs and NSAs cover large areas and the developments, in relation to these areas' key characteristics, are a minor component due to the significant size of the NCAs and the small amount of the NCA that would be occupied by the schemes in total.

Cumulative impacts during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect LCAs.

- 4.15.3.4 There would be no significant cumulative effects on LCAs during the operation and maintenance phase of Hornsea Three, as while the LCAs don't cover such as large areas as the NSCAs and the NSAs, they are still large areas and the developments in relation to these areas' key characteristics are a minor component due to the size of the LCAs and the small amount of the LCA that would be occupied by the schemes in total.

Cumulative night time impacts of Tier 1 and Tier 2 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect landscape resources.

- 4.15.3.5 Lighting during the construction phase would be controlled by a construction lighting plan, as part of the COCP. Therefore, there would be no significant cumulative night time effects during the operation and maintenance phase of Hornsea Three.

Cumulative impacts of Tier 1 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect visual resources.

- 4.15.3.6 The assessment of potential cumulative visual effects, for the operation and maintenance phase, is based on that of the opening year of Hornsea Project Three during winter year 1.

- 4.15.3.7 The close proximity of the Hornsea Three Onshore HVDC converter/HVAC substation and the Mangreen Quarry near Swardeston would result in cumulative effects during the operational phase, as well as the construction phase previously described. Users of PRoW FP7 and BR9, the Tas Valley Way and local residents would gain near to mid distance views of both schemes as prominent elements in the rural landscape south of Norwich.

Magnitude of Impact

- 4.15.3.8 The impact is predicted to be of local spatial extent, long term duration, continuous and not reversible, during the operational lifetime of the quarry. It is predicted that the impact will affect visual receptors directly. Therefore, the magnitude is considered to be **major**.

Sensitivity of Receptor

- 4.15.3.9 The residents and users of the PRoWs are of a high susceptibility, high reversibility and high value. The quarry proposals are reversible in the long term, following their restoration. Therefore, the sensitivity of the receptors is considered to be **high**.

Significance of Effect

- 4.15.3.10 Overall, it is predicted that the sensitivity of the receptor is considered to be high and the magnitude is deemed to be major. Therefore, the effect would be of **major adverse** significance in the long term, which is significant.

- 4.15.3.11 Hornsea Three will continue to develop plans for possible landscape screening for the site, which will be developed in consultation with the relevant local planning authorities, and confirmed in the outline LSMP that will be submitted as part of the final DCO application. Further, as discussed at 4.10.1.10, façade treatments can also be effectively used to reduce the visual impact of buildings, and to break up the impression of massing between different built elements within the same site. Hornsea Three will consult with the relevant LPAs with regard to possible external/façade treatments and develop a site specific approach. This will also be set out in the outline LSMP.

Cumulative impacts of Tier 2 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect visual resources.

4.15.3.12 The Tier 2 project, Norfolk Vanguard West (EN010079) cable route, would be complete and would not be visible above ground. Therefore there would be no significant effects resulting from Tier 2 projects during the operation and maintenance phase of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation.

Cumulative night time impacts of Tier 1 and Tier 2 projects during the operation and maintenance phase of the onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation may affect visual receptors.

4.15.3.13 There would be no lighting of the onshore cable route during the operation and maintenance phase. The lighting of the onshore HVAC booster station and the onshore HVDC converter/HVAC substation would be controlled by an agreed lighting strategy. Therefore, there would be no significant cumulative night time effects.

4.15.4 Decommissioning Phase

4.15.4.1 Due to the lack of data regarding the length of time before decommissioning for cumulative energy schemes, assumptions have been made and the following offshore wind farms have been selected as there is the potential that the onshore infrastructure of these projects would be decommissioned at the same time as that of Hornsea Three:

- PF/14/0177 - Agricultural Land at Weybourne Hope (Dudgeon Offshore Wind Farm) (Tier 1): and
- EN010079 - Norfolk Vanguard West Offshore Wind Farm (Tier 2).

Cumulative impacts of Tier 1 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect designated landscapes.

Norfolk Coast Area of Outstanding Natural Beauty (AONB)

Magnitude of Impact

4.15.4.2 The decommissioning of the Hornsea Three onshore infrastructure, if undertaken at the same time as the decommissioning of the Dudgeon onshore cable route would involve a high concentration of decommissioning activities in a small area of the AONB. The impact is predicted to be of local spatial extent, short term duration, continuous and is reversible. It is predicted that the impact will affect the receptor directly. Therefore, the magnitude is considered to be **major**.

Sensitivity of Receptor

4.15.4.3 The key features and elements of the DCM7, CTV1 and RHA2 LCA's would be affected in a similar way to the construction phase effects described above. As a nationally designated landscape the Norfolk Coast AONB is deemed to be of high susceptibility, of high reversibility and high value. Therefore, the sensitivity of the receptor is considered to be **high**.

Significance of Effect

4.15.4.4 Overall, it is predicted that the sensitivity of the receptor is considered to be high and the magnitude is deemed to be major. Therefore, the effect will, be of **major adverse** significance, which is significant.

4.15.4.5 However, the proposed mitigation measure would be to liaise with the owner/operator of Dudgeon Offshore Wind Farm to ensure that the programme of decommissioning does not overlap with that of Hornsea Three and this would reduce the effect to **moderate** adverse significance, which is not significant.

Cumulative impacts of Tier 2 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect designated landscapes.

4.15.4.6 Should the Hornsea Three cables be left in situ, there will be no Tier 2 projects that would give rise to any cumulative effects on these resources during the decommissioning phase of Hornsea Three. Further details on the decommissioning phase will be provided in the Environmental Statement where available.

Cumulative impacts of Tier 1 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect NSCAs and NCAs.

4.15.4.7 There would be no significant cumulative effects on NSCAs and NCAs during the decommissioning of the Hornsea Three infrastructure, as the NSCAs and NSAs cover large areas and the development, in relation to these areas' key characteristics, are a minor component.

Cumulative impacts of Tier 2 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect NSCAs and NCAs.

4.15.4.8 As with the Hornsea Three onshore cable route, Should the Norfolk Vanguard onshore cable route would be left in situ, as the Hornsea Three cables will be, there would be no Tier 2 projects that would give rise to any cumulative effects on these resources during the decommissioning phase of the Hornsea Three project. Hornsea Three will confirm this position, if possible, as part of the Environmental Statement.

Cumulative impacts of Tier 1 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect LCAs.

PF/14/0177 Agricultural Land at Weybourne Hope

- 4.15.4.9 The proposed decommissioning works would directly affect three LCAs, Drained Coastal Marshes (DCM2) Coastal Towns and Villages (CTV1) and Rolling Heath and Arable (RHA2). They all have aspects that relate to the shingle bank, views of and proximity to the sea. The decommissioning works if undertaken at the same time would have a direct and/or indirect **major** impact on some of these aspects of local character.

Sensitivity of Receptor

- 4.15.4.10 These LCAs are of a **medium** sensitivity to the proposed cumulative impact

Significance of Effect

- 4.15.4.11 The LCAs would experience a **major adverse** effect, which is significant. However, with careful programming of decommissioning of the two projects, the impact could be reduced to moderate. This would then have a **moderate adverse** effect, which is not significant.

Cumulative impacts at night during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect landscape resources and receptors.

- 4.15.4.12 There is no proposed night time lighting of the decommissioning of the Hornsea Three onshore cable route. Lighting of the onshore HVAC booster station, onshore HVDC converter/HVAC substation would be controlled by an agreed decommissioning lighting strategy and no significant cumulative impacts are anticipated.

Cumulative impacts of Tier 2 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect LCAs

- 4.15.4.13 As with the Hornsea Three onshore cable route, Should the Norfolk Vanguard onshore cable route would be left in situ, as the Hornsea Three cables will be, there would be no Tier 2 projects that would give rise to any cumulative effects on these resources during the decommissioning phase of the Hornsea Three project. Hornsea Three will confirm this position, if possible, as part of the ES.

Cumulative impacts of Tier 1 and Tier 2 projects at night during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect landscape resources and receptors.

- 4.15.4.14 There is no proposed night time lighting of the decommissioning of the Hornsea Three onshore cable route. Lighting of the onshore HVAC booster station, onshore HVDC converter/HVAC substation would be controlled by an agreed decommissioning lighting strategy and no significant cumulative impacts are anticipated. Once a lighting strategy has been agreed, a more comprehensive assessment of night time effects can be undertaken and will be submitted with the ES.

Cumulative impacts of Tier 1 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect visual receptors.

Intertidal area and landfall

- 4.15.4.15 Cumulative scheme PF/14/0177 - Agricultural Land at Weybourne Hope, is the landfall transition pit and buried electrical cable system of the landfall of the Dudgeon Offshore Wind Farm. The Hornsea Three onshore cable route would be located in the same location. A length of the onshore cable route of the Dudgeon Offshore Wind Farm would also cross the Hornsea Three onshore cable corridor in the parish of Weybourne, including an area adjacent to the beach. Marine-based receptors and people using the beach at Weybourne will have views of both schemes if decommissioning of both projects takes place at the same time, Residents located in the north of Weybourne will have more distant views of the decommissioning of both schemes.

- 4.15.4.16 The impact is predicted to be of local spatial extent, short term duration, continuous and is reversible. It is predicted that the impact will affect views from the receptors directly. Therefore, the magnitude is considered to be major.

Sensitivity of Receptor

- 4.15.4.17 As residents and users of the beach and PRowers, these receptors are of a high susceptibility, high reversibility and high value. Therefore, the sensitivity of the park is considered to be **high**.

Significance of Effect

- 4.15.4.18 Overall, it is predicted that the sensitivity of the receptor is considered to be high and the magnitude is deemed to be major. Therefore, the temporary cumulative effect would be of **major adverse** significance, which is significant. However, the proposed mitigation measure would be to liaise with the owner/operator of Dudgeon Offshore Wind Farm to ensure that the programme of decommissioning does not overlap with that of Hornsea Three and this would reduce the effect to **moderate** adverse significance, which is not significant.

Cumulative impacts of Tier 2 projects during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect visual receptors.

4.15.4.19 As with the Hornsea Three onshore cable route, the Norfolk Vanguard West onshore cable route would be left in situ. Therefore, there would be no Tier 1 or Tier 2 projects that would give rise to any night time cumulative effects on visual receptors during the decommissioning phase of the Hornsea Three project. Once a lighting strategy has been agreed, a more comprehensive assessment of night time effects can be undertaken and will be submitted with the Environmental Statement.

Cumulative impacts of Tier 1 and Tier 2 projects at night during the decommissioning of the onshore cable route, the onshore HVAC booster station and the onshore HVDC converter/HVAC substation may affect visual receptors.

4.15.4.20 There is no proposed night time lighting of the decommissioning of the Hornsea Three onshore cable route. Lighting of the onshore HVAC booster station, onshore HVDC converter/HVAC substation would be controlled by an agreed decommissioning lighting strategy and no significant cumulative impacts are anticipated.

4.15.5 Summary and Conclusion of Potential Cumulative Landscape and Visual Effects

Nationally Designated Landscapes

4.15.5.1 When considered in combination with Hornsea Three onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation the following nationally designated landscapes are thought to experience a potentially significant cumulative effect during construction, operation or decommissioning of Hornsea Project Three:

- Norfolk Coast AONB (with PF/14/0177, at construction and decommissioning); and
- Salle Park RPaG (with EN010079, at construction and possibly at decommissioning); Local LCAs and Visual Receptors

4.15.5.2 When considered in combination with the Hornsea Three onshore cable route, onshore HVAC booster station and onshore HVDC converter/HVAC substation the following LCAs are thought to have potentially significant cumulative effect as a result during construction, operation or decommissioning:

- North Norfolk LCA RHA2, LCA DCM7 and LCA CTV1 and users of PRoW and residents on coast near Weybourne (with PF/14/0177, at construction and decommissioning);
- South Norfolk LCA B1 and users of PRoW and residents near Swardeston (with C/7/2014/7030, at construction and operation); and
- Users of PRoW and residents near Reepham (with EN010079 Norfolk Vanguard cable route at construction and decommissioning).

4.15.5.3 All other schemes outlined within this report when considered in combination with Hornsea Three are not considered to have a significant cumulative effect upon the landscape and visual resources and receptors in their respective areas or views from sensitive receptors.

4.16 Transboundary effects

4.16.1.1 A screening of transboundary impacts has been carried out and is presented in volume 4, annex 5.4: Transboundary Impacts Screening Note. This screening exercise identified that there was no potential for significant transboundary effects with regard to landscape and visual resources from Hornsea Three upon the interests of other EEA States.

4.17 Inter-related effects

4.17.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the proposal on the same receptor. These are considered to be:

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the project (construction, operational and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three key project stages (e.g., construction phase noise, operational noise and noise during decommissioning and dismantling of the onshore HVAC booster station and HVDC converter/HVAC substation).
- Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on a given visual receptor, such as people using public rights of way (e.g., construction dust and noise and increased traffic), may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

4.17.1.2 A description of the likely inter-related effects arising from Hornsea Three on landscape and visual resources is provided in chapter 12: Inter-Related Effects (Onshore).

4.18 Summary and Conclusion

- 4.18.1.1 During the temporary construction phase of the proposed development, landscape and visual receptors would witness the highest levels of impact from the onshore infrastructure. Some of the same receptors would be affected by the construction works for the cable route and construction works for HVAC booster station or HVDC converter/HVAC substation but the overlap of works would not extend the duration of effects. The temporary nature of the construction works means that where significant effects are identified, the duration of the effects is short term and so would not be unacceptable and would not compromise the long term amenity value of any aspect of the landscape or visual resources.
- 4.18.1.2 Further, the way the construction works are planned, and managed, will affect the significance of the impact. Hornsea Three will develop an indicative construction strategy, refining the location of compound areas associated with the HVDC converter/HVAC substation site, and the arrangement of the temporary areas.
- 4.18.1.3 During the operation and maintenance phase of the onshore elements of Hornsea Three, there would be no significant effects upon landscape or visual receptors along the onshore cable route. As the reinstatement works from the construction phase matures, the landscape would return to its original state with characteristic landscape elements and typical views being restored. The lack of activity along the cable route during the long term operation and maintenance phase means that the only long term impacts upon landscape and visual resources would be as a result of the HVAC booster station and the HVDC converter/HVAC substation. The long term effects upon landscape and visual receptors would reduce over time as mitigation measures that have implemented mature.
- 4.18.1.4 The temporary decommissioning phase of the development would not cause any significant changes to landscape or visual receptors along the onshore cable route but the decommissioning works to remove the HVAC booster station and the HVDC converter/HVAC substation would cause some significant effects upon views. However, any mitigation planting implemented as part of the outline LSMP would have matured enough to provide additional screening benefit that the construction phase is not afforded. The benefit of this visual screening has not been considered as part of this assessment but would be considered at the Environmental Statement stage when the outline LSMP has been agreed.

4.19 Next Steps

- 4.19.1.1 The outline LSMP will be developed to include appropriate construction phase mitigation measures, which may include temporary screening of construction works from receptor locations. Further, the ongoing route refinement process will have regard to potential impacts and it is likely that the final route alignment will present opportunities to remove significant effects, by increasing the distance between construction works and sensitive receptors. The location of construction compounds will also be confirmed, and the operations within them more fully defined. This, in combination with site specific screening and layout proposals for temporary compounds, which will be set out in the LSMP, and presented with the final DCO application, will further mitigate the potential for significant landscape and visual effects.
- 4.19.1.2 A number of significant cumulative effects have been identified as a result of the proposed development when it is considered alongside other development that coincides with the study areas. However, the majority of these would occur during construction or decommissioning phases and would be temporary in nature and due to the type of construction activities; the effects would be reversible with the implementation of an appropriate scheme of project coordination and mitigation. Hornsea Three will consider further mitigation measures for all phases of the project, which will be developed in consultation with relevant stakeholders. This will include the development of an outline LSMP which will set out details for temporary landscape mitigation during the construction and decommissioning phases, a potential landscape scheme during the operation and maintenance phase, and other measures, such as potential façade treatments for buildings on the HVAC booster station and HVDC converter/HVAC substation sites. The further mitigation measures will be presented within the Environmental Statement that accompanies the final DCO application.
- 4.19.1.3 Although significant effects have been identified as a result of the PEIR assessment, the various phases of the various elements that make up the onshore elements of the development would not cause any effects so severe that residential properties could be considered uninhabitable and the character of views available from public access land/routes would not be changed so much that they are unrecognisable. The provision of appropriate mitigation measures will help to reduce the impact that the development has over time and ensure that it assimilates into the landscape and views whilst maintaining characteristic elements of the local and wider area.

- 4.19.1.4 Mitigation measures that could be implemented as part of the proposed scheme would be investigated once the project has been fully defined, allowing the likely areas of landform and vegetative mitigation to be sited appropriately. The opportunity to mitigate against the significant effects relies upon the implementation of appropriate mitigation measures that include strengthening landscape character and providing visual screening for the elements of the onshore infrastructure that would remain in situ for the duration of the long term operational and maintenance phase. The vehicle for identifying and detailing the recommended mitigation measures for the HVAC booster station and the HVDC converter/HVAC substation would be set out within the outline LSMP and details of these would be taken into account during the further landscape and visual resources assessment that will be undertaken to accompany the final DCO application.

Table 4.13: Summary of potential environmental effects, mitigation and monitoring

Description of impact	Measures adopted as part of the project	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional measures	Residual effect	Proposed monitoring
<i>Construction Phase</i>							
<p>Intertidal</p> <p>The temporary impact of the construction works in the intertidal area may affect landscape and seascape receptors and change the character of designated and undesignated landscape and seascape resources, directly and indirectly.</p> <p>The temporary impact of the construction works in the intertidal area may directly affect the views of specific visual receptors, e.g. residential views and users of Public Rights of Way (PRoWs), or change the nature of the visual resources of the area.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between minor and moderate</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between medium and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and moderate</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None
<p>Onshore Cable Corridor</p> <p>The temporary impact of the construction works along the onshore cable corridor may affect designated and non-designated landscape and seascape resources, directly and indirectly.</p> <p>The temporary impact of the construction works along the onshore cable corridor may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between medium and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None
<p>Compounds</p> <p>The temporary impact of the construction of the compounds and side accesses may affect designated and non-designated landscape and seascape resources, directly and indirectly.</p> <p>The temporary impact of the construction of the compounds and side accesses along the onshore cable corridor may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None

Description of impact	Measures adopted as part of the project	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional measures	Residual effect	Proposed monitoring
<p>Onshore HVAC Booster Station</p> <p>The temporary impact of the construction of the onshore HVAC booster stations may affect designated and non-designated landscape resources, directly and indirectly.</p> <p>The temporary impact of the construction works of the onshore HVAC booster stations may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None
<p>Onshore HVDC Converter/HVAC Substations</p> <p>The temporary impact of the construction works of the onshore HVDC converter/HVAC substation may affect designated and non-designated landscape resources, directly and indirectly.</p> <p>The temporary impact of the construction works of the onshore HVDC converter/HVAC substation may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None
<i>Operation phase</i>							
<p>Onshore HVAC Booster Station</p> <p>The impact of the onshore HVAC booster stations during the operation phase may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of the onshore HVAC booster stations during the operation and maintenance phase may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None

Description of impact	Measures adopted as part of the project	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional measures	Residual effect	Proposed monitoring
<p>Onshore HVDC Converter/HVAC Substations</p> <p>The impact of the onshore HVDC converter/HVAC substation during the operation phase may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of the onshore HVDC converter/HVAC substation during the operation phase may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None
<i>Decommissioning phase</i>							
<p>Onshore HVAC Booster Station</p> <p>The impact of decommissioning the onshore HVAC booster station may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of decommissioning the onshore HVAC booster station may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None
<p>Onshore HVDC Converter/HVAC Substation</p> <p>The impact of decommissioning the onshore HVDC converter/HVAC substation may directly and indirectly affect designated and non-designated landscape resources.</p> <p>The impact of decommissioning the onshore HVDC converter/HVAC substation may directly affect visual receptors.</p>	The LSMP would be developed during the preparation of the ES along with the CoCP and the Lighting Plan	<p>Changes to the landscape baseline would range between negligible and major</p> <p>Changes to visual baseline would range between no change and major</p>	<p>Sensitivity of landscape receptors ranges between low and high</p> <p>Sensitivity of visual receptors ranges between low and high</p>	<p>Significance of effects upon landscape receptors would range between negligible and major</p> <p>Significance of effect upon visual receptors would range between negligible and major</p>	None	N/A	None

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