

Hornsea Project Three
Offshore Wind Farm



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Environmental Statement:
Volume 6, Annex 7.6 – Construction Vehicle Trip Generation Assumptions

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Hornsea 3
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Orsted

Environmental Impact Assessment

Environmental Statement

Volume 6

Annex 7.6 – Construction Vehicle Trip Generation Assumptions

Liability

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

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This report is also downloadable from the Hornsea Project Three offshore wind farm website at:

www.hornseaproject3.co.uk

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Front cover picture: Kite surfer near a UK offshore wind farm © Orsted Hornsea Project Three (UK) Ltd, 2018.

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Glossary

Term	Description
Compound	Collective term used to refer to secondary construction compounds along the Hornsea Three onshore cable corridor as well as the landfall construction compound (defined in detail in volume 1, chapter 3: Project Description). Although there is also a main construction compound, this is referred to individually due to its distant location relative to the onshore cable corridor.
Movements	Total number of arrivals and departures (i.e. two-way) of the listed type of vehicle.
Onshore elements of Hornsea Three	Hornsea Three landfall area, onshore cable corridor, the onshore HVAC booster station, the onshore HVDC converter/HVAC substation and the interconnection with the Norwich Main National Grid substation.

Acronyms

Acronyms	Description
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current

Units

Unit	Description
%	Percentage
Staff per day	Number of staff on site per day
m	Metre (distance)
km	Kilometre (distance)
m ²	Metres squared (area)
mph	Miles per hour (speed)

1. Introduction

1.1.1.1 This annex presents the construction vehicle trip assumptions that have been used to assess the traffic and transport impacts of Hornsea Three (see volume 3, chapter 7: Traffic and Transport). The parameters given in Table 1.1 represent the maximum design scenario (i.e. they represent the worst case).

1.1.1.2 Note that where a total figure is listed, this covers works associated with Hornsea Three as a whole, regardless of whether it is delivered in one or two phases.

Table 1.1: Construction vehicle trip generation assumptions.

Unit	Description
Horizontal Directional Drilling sites	
Number of minor HDDs	105
Number of major HDDs	15
Duration of works at each HDD site	1 month
Average number of staff per minor HDD site	8 staff per day
Average number of staff per major HDD site	13 staff per day
Total number of HGV movements per minor HDD site	20 HGV movements (equivalent to 2 movements daily)
Total number of HGV movements per major HDD site	22 HGV movements (equivalent to 2 movements daily)
Staff mode share	75% car driver (remainder as car passenger or other sustainable modes)
Onshore cable corridor and compounds	
Rate of construction (indicative)	3 months per location per phase
% of haul road surfaced with aggregate	100%
Width of haul road	6 m
Depth of aggregate on haul road	1 m
Tonnes of aggregate material per HGV	20 tonnes
Maximum number of trenches across cable corridor width	6 trenches
Width of trenches (at surface)	5 m
Width of trenches (at base)	1.5 m
% of each the secondary compounds assumed to be surfaced with aggregate ^a	50%
Depth of aggregate surfacing at compounds	0.3 m

Unit	Description
Average number of staff per work front (up to 5 work fronts operating at any one time)	20 staff per day
Staff Mode Share	75% single occupancy car driver (remainder as car passenger or other sustainable modes)
Length of cable per HGV (i.e. 1 cable roll)	800 m
% of cable route requiring ducting	100%
Typical length of ducting per HGV	750 m
Length of onshore cable corridor served by one HGV carrying cable tiles	800 m
Depth of imported stabilised backfill	0.6 m (average)
% of onshore cable corridor which will be fenced	100%
Length of onshore cable corridor fencing per HGV	200 m
Typical length of trench supports per HGV	500 m
Total number of HGV movements	325,374 HGV movements (equivalent to up to 509 movements daily spread across the highway network)
Number of secondary compounds	5
% of each secondary compound to be surfaced with aggregate	50%
Depth of aggregate at compounds	0.3 m
Average number of staff per work front (up to 5 work fronts operating at any one time)	20 staff per day
Staff mode share	75% car driver (remainder as car passenger or other sustainable modes)
HVDC converter/HVAC substation	
Maximum total duration of HVDC converter/HVAC substation construction	3 years
Total number of HGV movements	24,012 movements (equivalent to 29 movements daily)
Number of staff on HVDC converter/HVAC substation site	82 staff per day
Staff mode share	50% car driver (remainder as car passenger or other sustainable modes)
Number of abnormal indivisible loads	12
HVAC booster station	
Maximum total duration of HVAC booster station construction	12 months
Total number of HGV movements	6,597 movements (equivalent to 12 movements daily)
Average number of staff on HVAC booster station site	61 staff per day

Unit	Description
Staff mode share	50% car driver (remainder as car passenger or other sustainable modes)
Number of abnormal indivisible loads	6
Landfall	
Anticipated total duration of landfall works	32 months
Total number of HGV movements	4,800 movements (equivalent to 5 movements daily)
Total number of non-HGV movements	6,950 movements
Average number of staff on landfall site	60 staff per day
Staff mode share	50% car driver (remainder as car passenger or other sustainable modes)
^a The main compound is already surfaced with hardstanding, and therefore no aggregate required at the main compound.	