Norfolk Boreas Offshore Wind Farm

Appendix 24.20

Scenario 2 – GHD Assumed Construction Materials and Associated HGV Delivery Derivation

Environmental Statement

Volume 3

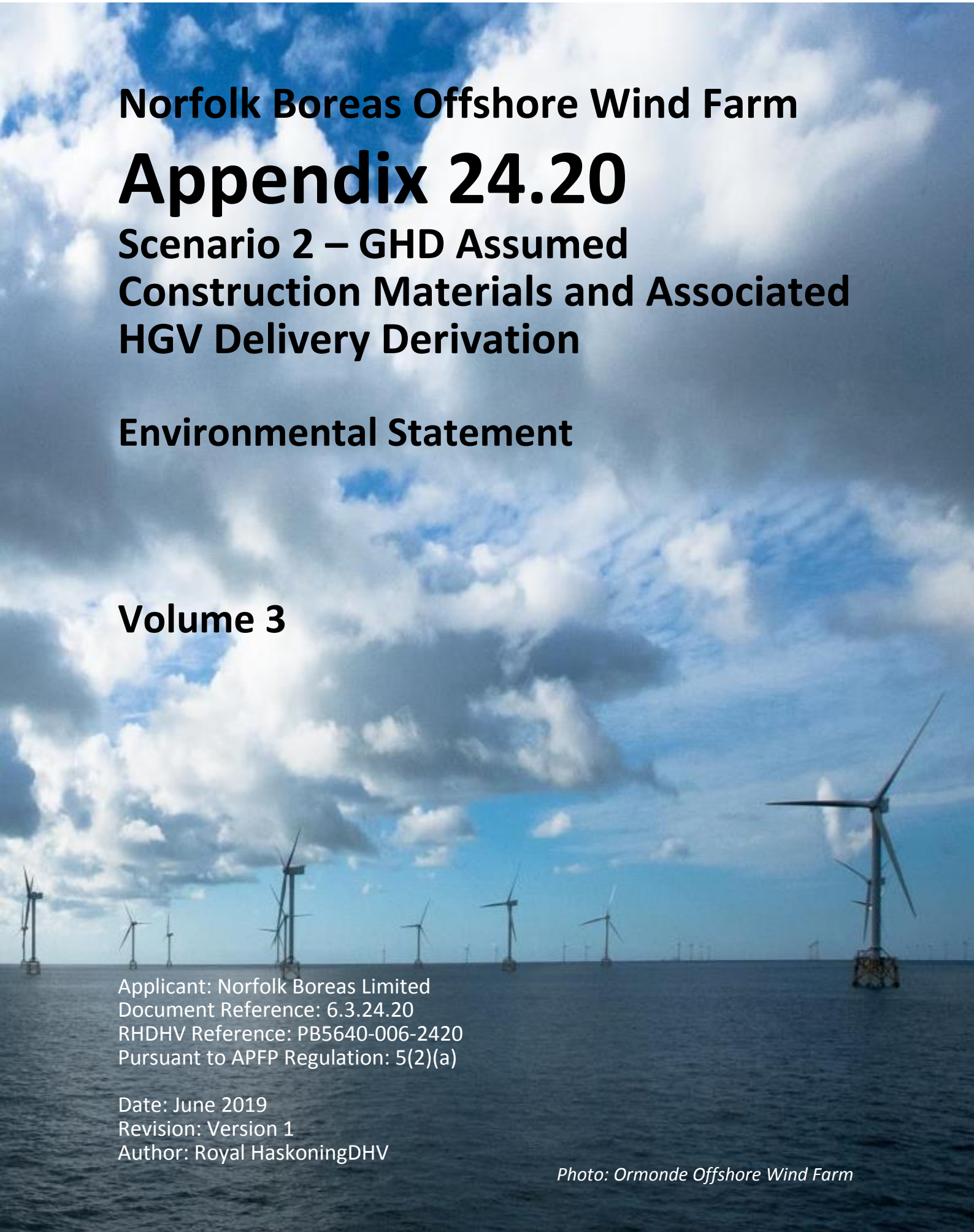

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Photo: Ormonde Offshore Wind Farm

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GHD Assumed Construction Materials and Associated HGV Delivery Derivation

Note: Materials in Bold/Italic are to be both delivered and removed from site

Note: The following assumptions are for the purposes of indicative worst case traffic and transport assessments, based on high level consideration for typical construction practices.

Location	Material	Assumption	Dimensions	One-way HGVs	Comment
Landfall HDD (Scenario 2)	***Mobilisation/Demobilisation***	***40***	***HGV Loads***	***40***	***Mobilisation and Demobilisation generally consist of 20 HGV loads delivered over 2 days with a crane on site (150t-300t) to position equipment***
	Stone (Aggregate)	***900***	***m3***	***90***	***50mx60m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal***
	Water	25,000	L	3	Used to generate drilling slurry (bentonite). If mains water supply not avalable, utilise 10,000L water tankers
	Geotextiles	***6,000***	***m2***	***4***	***50mx60m compound dimensions (TEMPORARY, will require removal***
	Drilling Rig	***100***	***T***	***2***	***1 for each parallel site***
	Fencing	***440***	***m***	***2***	***Perimeter fencing (60m x 50m) (utilising Harris Fencing - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal***
	Excavated material (landfall)	1,325	m3	213	assumed up to 1000m drill length, 3x drills (allowance for failed drill on each site), 0.65m diameter bore - to be removed from sit
Transition Pit	Concrete	90	m3	12	2 transition pits, each 10mx15m, assumed concrete slab depth of 0.3m
	Excavated Material	90	m3	15	Equivalent to concreted floor - to be removed from site (displaced by concrete slab)
			Totals	**381**	
Onshore Trenchless (17 No. locations) (Scenario 2)	***Mobilisation/Demobilisation***	***40***	***HGV Loads***	***680***	***Riggall Report. Mobilisation and Demobilisation generally consist of 20 HGV loads delivered over 2 days with a crane on site (150t-300t) to position equipmen***
	Stone (Aggregate)	***3,750***	***m3***	***6375***	***100mx50m and 150m x 50m compound dimensions (worst case trenchless with stop end) with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require remova***
	Water	25,000	L	43	Used to generate drilling slurry (bentonite). If mains water supply not avalable, utilise 10,000L water tankers.
	Geotextiles	***25,000***	***m2***	***284***	***100mx50m and 150m x 50m compound dimensions (worst case trenchless with stop end) s (TEMPORARY, will require removal***
	Drilling Rig	***100***	***T***	***34***	
	Fencing	***700***	***m***	***29***	***Perimeter fencing (100mx50m and 150m x 50m) (utilising temporary fencing panels - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal***
	Excavated material (crossings)	221	m3	601	assumed up to 250m drill length, 2x drills, 0.75m diameter bore - to be removed from site
			Totals	**8044**	
Mobilisation Areas* (14 No.) (Scenario 2)	***Stone (Aggregate)***	***3,000***	***m3***	***3900***	***100mx100m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal***
	Fencing	***800***	***m***	***25***	***Temporary femncing panels***
	Welfare facilities and associated infrastructure	***8***		***104***	
			Totals	**4029**	
Cable Route (Scenario 2)	CBS	42,458	m3	5308	60km section length x 1m trench width x 0.46m depth x 2 trenches (NB HVDC) - volume of ducts (2x 260mm ducts per trench
	Trench Excavated Material	55,200	m3	8832	Assumed displaced soil due to CBS (PERMANENT REMOVAL)
	Running track stone (aggregate)	***216,000***	***m3***	***21600***	***60 km route length x 6m width x 0.3 depth x 1 haul road (TEMPORARY) - worst case assumption, bog mats or other geotextile could be use***
	Fencing	***240,000***	***m***	***572***	***route edging (60 km length x 2 sides) - worst case assumption that entire route length is fenced off (utilising Harris Fencing - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal)***
	Ducts	200	Deliveries	200	
	Cable Tiles	80	Deliveries	80	
	Fibres	-	Deliveries	0	Refer to Appendix 24.6
	Cable Drums	-	Deliveries	0	Refer to Appendix 24.6
			Totals	**36592**	
Joint Pits (Scenario 2)	Concrete	-	m3	0	Refer to Appendix 24.6
	Excavated Material	-	m3	0	Refer to Appendix 24.6
	CBS	-	m3	0	Refer to Appendix 24.6
	Cable Joints	-	No.	0	Refer to Appendix 24.6
			Totals		
HVDC Onshore Substation (Scenario 2)	Concrete	14,625	m3	1,829	250mx300m HVDC dimensions with assumed concrete depth of 0.3m and coverage of 65% of site
	Stone (Aggregate)	7,875	m3	788	250mx300m HVDC dimensions with assumed hardcore depth of 0.3m and coverage of 35% of site
	Fencing	1,100	m	3	perimeter (utilising Harris Fencing - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal
	Supergrid Transformer	8	No.	8	15m x 5m x 5.5m ~250T
	Converter Building	2	No.	50	Likely steel frame cladded. 110m x 70m x 19m each
	Associated Electrical Equipment			50	Refer to Chapter 5 - Project Description for further details of additional electrical assets
	Access Road	5,400	m3	540	2.0 km route length x 6m width x 0.450 depth x 1 Access road
	Excavated Material	4,050	m3	648	Attenuation pond displaced material, to be removed.
			Totals	**3916**	
Onshore Substation (Temp Compound) (Scenario 2)	***Stone (Aggregate)***	***6,000***	***m3***	***600***	***100mx200m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal***
	Fencing	***1,200***	***m***	***3***	***perimeter (utilising Harris Fencing - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal***
	Welfare facilities and associated infrastructure	***16***		***16***	
	Access Road	***1,800***	***m3***	***180***	***0.5 km route length x 6m width x 0.3 depth x 1 haul road (TEMPORARY) - worst case assumption, bog mats or other geotextile could be use***
			Totals	**799**	
NGET Substation (Scenario 2)	Concrete	2,610	m3	327	145mx200m extension with assumed concrete depth of 0.3m and coverage of 30% of site.
	Stone (Aggregate)	6,090	m3	609	145mx200m extension dimensions with assumed hardcore depth of 0.3m and coverage of 70% of site
	Fencing	400	m	4	Pallisade Perimeter extension (2x200m length - assumed existing 145m fence is removed and reused at new boundary)
	Busbar steelwork and gantrys	400	m	40	1x200m extension to busbar + gantries (50m deliveries) + New Towers (each 50m tall)
	Excavated Material	2,100	m3	336	Attenuation pond displaced material, to be removed.
			Totals	**1316**	
NGET Substation (Temp Compound) (Scenario 2)	***Stone (Aggregate)***	***20,250***	***m3***	***2025***	***300mx150m + 150m x 150m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require remova***
	Fencing	***3,000***	***m***	***8***	***perimeter (utilising Harris Fencing - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal***
	Welfare facilities and associated infrastructure	***16***		***16***	
	Access Road	***1,800***	***m3***	***180***	***0.5 km route length x 6m width x 0.3 depth x 1 haul road (TEMPORARY) - worst case assumption, bog mats or other geotextile could be use***
	Temporary OHL	***40***		***40***	***3x Temp towers and line***
			Totals	**2269**	
A47 Highways Works with mobilisation area* (Scenario 2)	Concrete/Asphalt	625	m3	79	250m x 5m centre lane addition @ 0.5m depth
	Stone (Aggregate)	***3,000***	***m3***	***300***	***100mx100m compound dimensions with assumed hard standing (aggregate stone) depth of 0.3m and coverage of 50% of site. (TEMPORARY, will require removal***
	Fencing	***800***	***m***	***2***	***perimeter (utilising Harris Fencing - 2m(h) x 3.5m(l). 120 (420m) panels per truck. 180 (420m) foot blocks per truck. 2x two-way movement (Installation & Removal***
	Welfare facilities and associated infrastructure	***16***		***16***	
			Totals	**397**	

* 13 Mobilisation areas associated cable corridor with 1 mobilisation area associated with the A47 highway works detailed seperately within Appendix table