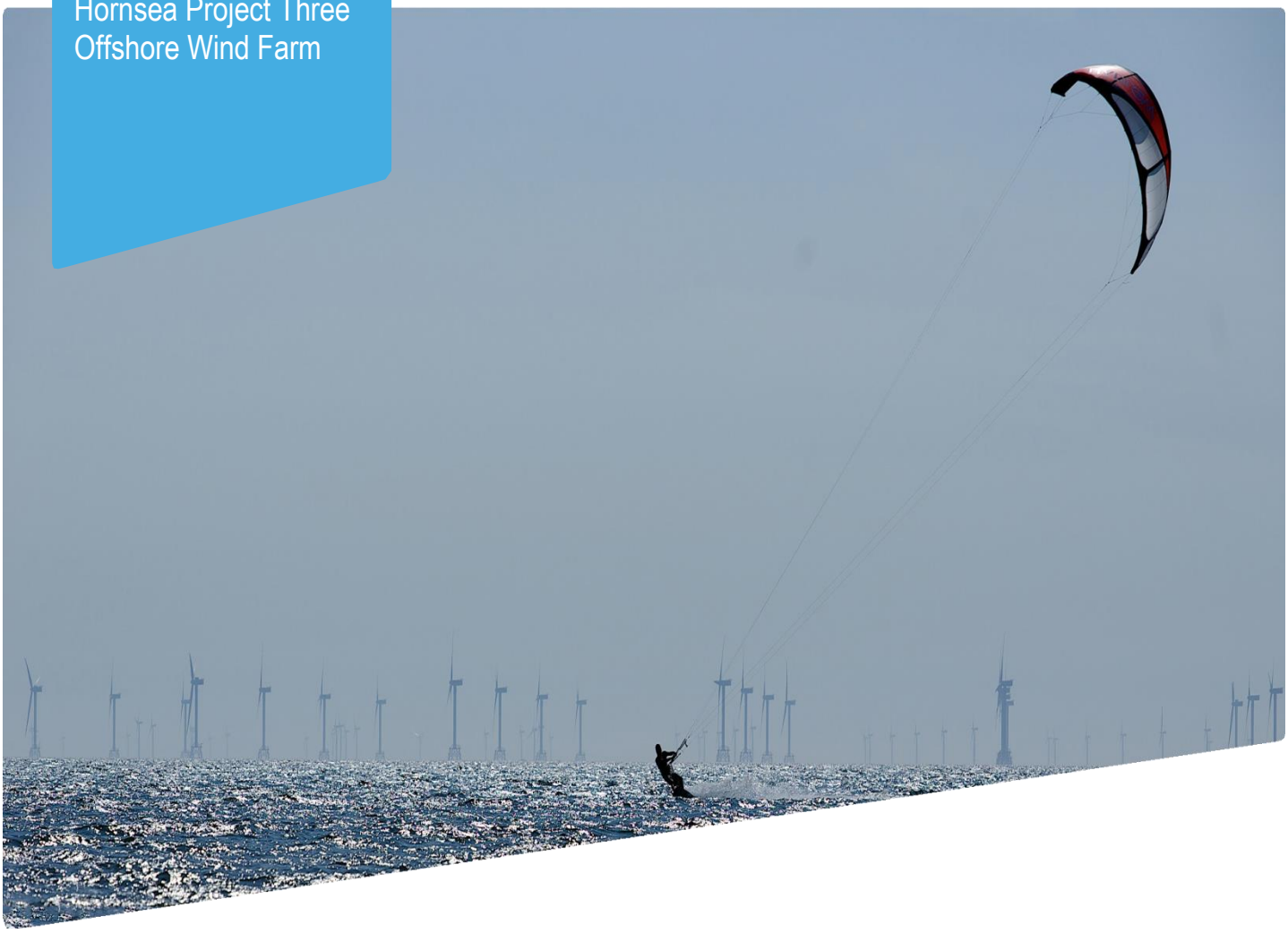
Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three

Offshore Wind Farm

Attachment 2: Response to The Planning Inspectorate's Section 51 Advice (08th June 2018) Relationship Between Design Parameters Draft Development Consent Order and Environmental Statement

Date: July 2018

Hornsea 3
Offshore Wind Farm

Ørsted

Response to The Planning Inspectorate's Section 51 Advice (08th June 2018)

Relationship Between Design Parameters Draft Development Consent Order and Environmental Statement

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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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1. Relationship Between Design Parameters Draft Development Consent Order and Environmental Statement

1.1 The relationship between the maximum design parameters included in the draft Development Consent Order (DCO) and Deemed Marine Licence (as submitted)[1], and the Environmental Statement is outlined in Table 1.1 below.

[1] (As submitted) means as submitted with the application on 14 May 2018. It is anticipated that the draft DCO and Deemed Marine Licences will evolve through the examination process and references may change.

Table 1.1: Relationship between the maximum design parameters in the draft DCO and Deemed Marine Licence (as submitted), and the Environmental Statement.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 1, 1(c)	Disposal of up to 3,563,133 cubic metres of inert material of natural origin.	The maximum design parameter has been calculated for the HVAC transmission scenario from: • Sandwave clearance in Hornsea Three array area (Table 3.4 of Volume 1, Chapter 3: Project Description); • Sandwave clearance in Hornsea Three offshore cable corridor (Table 3.5 of Volume 1, Chapter 3: Project Description); • Spoil volume for turbine foundations (Table 3.10 of Volume 1, Chapter 3: Project Description); • Spoil volume for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); • Spoil volume for surface offshore HVAC booster station foundations (Table 3.12 of Volume 1, Chapter 3: Project Description); • Spoil volume for offshore accommodation platform foundations (Table 3.15 of Volume 1, Chapter 3: Project Description); and • HDD exit pit excavated material (Table 3.52 of Volume 1, Chapter 3: Project Description). Being 1,202,956 m^3 + 71,150 m^3 + 1,225,692 m^3 + 735,000 m^3 + 245,000 m^3 + 63,335 m^3 + (2,500 m^3 * eight) = 3,563,133 m^3.	The HVAC transmission option results in the maximum design scenario. To calculate the HVDC scenario, exchange the spoil volume from Table 3.12 for the equivalent in Table 3.14 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVAC scenario and therefore is not considered the maximum design scenario.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 2(1)(a)	In the event that the total number of wind turbine generators constructed is 160 or fewer— (i) exceed a height of 325 metres when measured from LAT to the tip of the vertical blade; and (ii) exceed a rotor diameter of 265 metres.	The maximum design parameters are outlined in Table 3.6 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 2(1)(b)	In the event that the total number of wind turbine generators constructed is 300— (i) exceed a height of 250 metres when measured from LAT to the tip of the vertical blade; and (ii) exceed a rotor diameter of 195 metres.	The maximum design parameters are outlined in Table 3.6 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 2(1)(d)	34.97 metres from LAT to the lowest point of the rotating blade.	The maximum design parameter is outlined in Table 3.6 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 2(4)(a)	Pin pile diameter for wind turbine generators to be no greater than four meters.	The maximum design parameter is outlined in Table 3.19 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 2(4)(b)	Monopile foundation diameter for wind turbine generators to be no greater than 15 metres.	The maximum design parameter is outlined in Table 3.16 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 2(5)(a)	Total seabed footprint area for wind turbine generator foundations will not exceed 435,660 square meters excluding scour protection.	The maximum design parameter is outlined in Table 3.10 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 2(5)(b)	Total seabed footprint area for wind turbine generator foundations will not exceed 1,623,182 square meters including scour protection.	The maximum design parameter is outlined in Table 3.10 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 3(1)	The total number of offshore electrical installations and offshore accommodation platforms shall not exceed 21, and shall consist of no more than— (a) 12 offshore type 1 substations; (b) four offshore type 2 substations; (c) four offshore HVAC booster stations; (d) six offshore subsea HVAC booster stations; and (e) three offshore accommodation platforms.	The maximum design parameters are outlined in Table 3.9 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 3(2)(a) to (c)	The dimensions of any offshore type 1 substations forming part of the authorised project must not exceed— (a) 90 metres in height when measured from LAT; (b) 100 metres in length; and (c) 100 metres in width.	The maximum design parameters are outlined in Table 3.39 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 3(3)(a) to (c)	The dimensions of any offshore type 2 substation forming part of the authorised project must not exceed— (a) 110 metres in height when measured from LAT; (b) 180 metres in length; and (c) 90 metres in width.	The maximum design parameters are outlined in Table 3.41 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 3(4)(a) to (c)	The dimensions of any offshore HVAC booster station forming part of the authorised project must not exceed— (a) 90 metres in height when measured from LAT; (b) 100 metres in length; and (c) 100 metres in width.	The maximum design parameters are outlined in Table 3.42 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 3(5)(a) to (c)	The dimensions of any offshore subsea HVAC booster station forming part of the authorised project must not exceed— (a) 15 metres in height when measured from the seabed; (b) 50 metres in length; and (c) 50 metres in width.	The maximum design parameters are outlined in Table 3.43 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 3(6)(a) to (c)	The dimensions of any offshore accommodation platform forming part of the authorised project must not exceed— (a) 64 metres in height when measured from LAT; (b) 60 metres in length; and (c) 60 metres in width.	The maximum design parameters are outlined in Table 3.35 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 3(7)	Any bridge located between any offshore substation or accommodation platform shall be no longer than 100 metres.	The maximum design parameter is outlined in Table 3.35 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 3(10)(a)	Pin pile diameter for an offshore installation or offshore accommodation platform shall not exceed four metres.	The maximum design parameter is outlined in Table 3.24 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 3(10)(b)	Monopile foundation diameter for an offshore installation or offshore accommodation platform shall not exceed 15 metres.	The maximum design parameter is outlined in Table 3.16 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 3(11)(a)	Total seabed footprint area for offshore accommodation platform foundations must not exceed 8,836 square metres excluding scour protection.	The maximum design parameter is outlined in Table 3.15 of Volume 1, Chapter 3: Project Description.	-
Schedule 1, Part 3, 3(11)(b)	Total seabed footprint area for offshore accommodation platform foundations must not exceed 28,628 square metres including scour protection.	The maximum design parameter is outlined in Table 3.15 of Volume 1, Chapter 3: Project Description.	-

Schedule 1, Part 3, 3(12)(a)	Total seabed footprint area for offshore installation foundations must not exceed 138,900 square metres excluding scour protection.	The maximum design parameter has been calculated for the HVDC transmission scenario from: • Seabed area structure for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); and • Seabed area structure for offshore HVDC collector substation foundations (Table 3.14 of Volume 1, Chapter 3: Project Description). Being 67,500 m^2 + 71,400 m^2 = 138,900 m^2.	Schedule 1, Part 3, 3(12)(a) and Schedule 12, Part 2, 2(8)(a) are imposing the same limitation. On review, for consistency and clarity, Schedule 1, Part 3, 3(12)(a) could include 'electrical' before 'installation' so as to ensure consistency with Schedule 12, Part 2, 2(8)(a). It would therefore state: "*The total seabed footprint area for offshore electrical installation foundations must not exceed…*". This potential modification to the wording of the Draft DCO can be considered as part of the examination process. The HVDC transmission option results in the maximum design scenario. To calculate the HVAC scenario, exchange the seabed area from Table 3.14 for the equivalent in Table 3.12 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVDC scenario and therefore is not considered the maximum design scenario.
Schedule 1, Part 3, 3(12)(b)	Total seabed footprint area for offshore installation foundations must not exceed 267,900 square metres including scour protection.	The maximum design parameter has been calculated for the HVDC transmission scenario from: • Seabed area total for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); and • Seabed area total for offshore HVDC collector substation foundations (Table 3.14 of Volume 1, Chapter 3: Project Description).	Schedule 1, Part 3, 3(12)(b) and Schedule 12, Part 2, 2(8)(b) are imposing the same limitation. On review, for consistency and clarity, Schedule 1, Part 3, 3(12)(b) could include 'electrical' before 'installation' so as to ensure consistency with Schedule 12, Part 2, 2(8)(b). It would therefore

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
		Being 158,700 m^2 + 109,200 m^2 = 267,900 m^2.	state: "*The total seabed footprint area for offshore electrical installation foundations must not exceed…*"). This potential modification to the wording of the Draft DCO can be considered as part of the examination process. The HVDC transmission option results in the maximum design scenario. To calculate the HVAC scenario, exchange the seabed area total from Table 3.14 for the equivalent in Table 3.12 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVDC scenario and therefore is not considered the maximum design scenario.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 4	Total volume of scour protection for wind turbine generators, offshore accommodation platforms and offshore electrical installations shall not exceed 2,709,673 cubic metres	The maximum design parameter has been calculated for the HVDC transmission scenario from: • Scour protection volume for turbine foundations (Table 3.10 of Volume 1, Chapter 3: Project Description); • Scour protection volume for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); • Scour protection volume for offshore HVDC collector substation foundations (Table 3.14 of Volume 1, Chapter 3: Project Description); and • Scour protection volume for offshore accommodation platform foundations (Table 3.15 of Volume 1, Chapter 3: Project Description). Being 2,375,044 m^3 + 182,400 m^3 + 108,800 m^3 + 43,429 m^3 = 2,709,673 m^3.	The HVDC transmission option results in the maximum design scenario. To calculate the HVAC scenario, exchange the scour protection volume from Table 3.14 for the equivalent in Table 3.12 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVDC scenario and therefore is not considered the maximum design scenario.
Schedule 1, Part 3, 5(2)	Total length of the cables comprising Work No. 1(c) shall not exceed 830 kilometres.	The maximum design parameter is outlined in Table 3.31 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 5(3)	total length of the cables comprising Work Nos. 2(c), 2(d) and 3(d) shall not exceed 1,371 kilometres.	The maximum design parameter has been calculated from: • Total length of export cables (Table 3.45 of Volume 1, Chapter 3: Project Description); and • Total length of offshore interconnector cables (Table 3.49 of Volume 1, Chapter 3: Project Description). Being 1,146 km + 225 km = 1,371 km.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 5(4)	Total volume of cable protection (excluding cable crossings) shall not exceed 2,201,000 cubic metres with a maximum footprint of 1,540,700 square metres.	The volume of cable protection, excluding cable crossings, has been calculated from: • Rock protection volume for array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); • Rock protection volume for offshore export cables (Table 3.46 of Volume 1, Chapter 3: Project Description); and • Rock protection volume for offshore interconnector cables (Table 3.50 of Volume 1, Chapter 3: Project Description). Being 830,000 m^3 + 1,146,000 m^3 + 225,000 m^3 = 2,201,000 m^3. The footprint of cable protection, excluding cable crossings, has been calculated from: • Rock protection area for array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); • Rock protection area for offshore export cables (Table 3.46 of Volume 1, Chapter 3: Project Description); and • Rock protection area for offshore interconnector cables (Table 3.50 of Volume 1, Chapter 3: Project Description). Being 581,000 m^2 + 802,200 m^2 + 157,500 m^2 = 1,540,700 m^2.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 1, Part 3, 5(5)	Total volume of cable protection associated with cable crossings shall not exceed 784,875 cubic metres with a maximum footprint of 747,500 square metres.	The volume of cable protection associated with cable crossings has been calculated from: • Pre-lay cable/pipe crossing volume for array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); • Post-lay cable/pipe crossing volume for array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); and • Cable/pipe crossings volume for offshore export cables including operation (Table 3.48 of Volume 1, Chapter 3: Project Description). Being 21,875 m^3 + 70,000 m^3 + 693,000 m^3 = 784,875 m^3. The footprint of cable protection associated with cable crossings has been calculated from: • Cable/pipe crossings total impacted area for array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); and • Cable/pipe crossings total impacted area for offshore export cables (Table 3.48 of Volume 1, Chapter 3: Project Description). Being 87,500 m^2 + 660,000 m^2 = 747,500 m^2.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 1, 2(f)	Disposal of up to 1,344,318 cubic metres of inert material of natural origin.	The maximum design parameter has been calculated from: • Sandwave clearance for foundations (Table 3.5 of Volume 1, Chapter 3: Project Description); • Sandwave clearance for array cables (Table 3.5 of Volume 1, Chapter 3: Project Description); • Spoil volume for turbine foundations (Table 3.10 of Volume 1, Chapter 3: Project Description); and • Spoil volume for offshore accommodation platform foundations (Table 3.15 of Volume 1, Chapter 3: Project Description). Being 3,260 m^3 + 52,031 m^3 + 1,225,692 m^3 + 63,335 m^3 = 1,344,318 m^3.	-
Schedule 11, Part 2, 1(1)(a)	In the event that the total number of wind turbine generators constructed is 160 or fewer— (i) exceed a height of 325 metres when measured from LAT to the tip of the vertical blade; and (ii) exceed a rotor diameter of 265 metres.	The maximum design parameters are outlined in Table 3.6 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 2, 1(1)(b)	In the event that the total number of wind turbine generators constructed is 300— (i) exceed a height of 250 metres when measured from LAT to the tip of the vertical blade; and (ii) exceed a rotor diameter of 195 metres.	The maximum design parameters are outlined in Table 3.6 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 1(1)(d)	34.97 metres from LAT to the lowest point of the rotating blade.	The maximum design parameter is outlined in Table 3.6 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 1(4)(a)	Pin pile diameter for wind turbine generators to be no greater than four meters.	The maximum design parameter is outlined in Table 3.19 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 1(4)(b)	Monopile foundation diameter for wind turbine generators to be no greater than 15 metres.	The maximum design parameter is outlined in Table 3.16 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 2, 1(5)(a)	Total seabed footprint area for wind turbine generator foundations will not exceed 435,660 square meters excluding scour protection.	The maximum design parameter is outlined in Table 3.10 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 1(5)(b)	Total seabed footprint area for wind turbine generator foundations will not exceed 1,623,182 square meters including scour protection.	The maximum design parameter is outlined in Table 3.10 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 1(6)	Volume of scour protection material for wind turbine generator foundations must not exceed 2,375,044 cubic metres.	The maximum design parameter is outlined in Table 3.10 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 2, 2(2)(a) to (c)	The dimensions of any offshore accommodation platform forming part of the authorised project must not exceed— (a) 64 metres in height when measured from LAT; (b) 60 metres in length; and (c) 60 metres in width.	The maximum design parameters are outlined in Table 3.35 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 2(3)	Any bridge located between any offshore substation or accommodation platform shall be no longer than 100 metres.	The maximum design parameter is outlined in Table 3.35 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 2(5)(a)	Pin pile diameter for an offshore accommodation platform shall not exceed four metres.	The maximum design parameter is outlined in Table 3.24 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 2, 2(5)(b)	Monopile foundation diameter for an offshore accommodation platform shall not exceed 15 metres.	The maximum design parameter is outlined in Table 3.16 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 2(6)(a)	Total seabed footprint area for offshore accommodation foundations must not exceed 8,836 square metres excluding scour protection.	The maximum design parameter is outlined in Table 3.15 of Volume 1, Chapter 3: Project Description.	-
Schedule 11, Part 2, 2(6)(b)	Total seabed footprint area for offshore accommodation foundations must not exceed 28,628 square metres including scour protection.	The maximum design parameter is outlined in Table 3.15 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 2, 2(7)	Total volume of scour protection for offshore accommodation platforms shall not exceed 43,429 cubic metres.	The maximum design parameter is outlined in Table 3.15 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 11, Part 2, 3(1)	Total length of the cables in Work No.1(c) when combined with the cable authorised under Work No.2(c) shall not exceed 1,055 kilometres. Total volume of cable protection in Work No.1(c) when combined with the cable authorised under Work No.2(c) shall not exceed 1,055,000 cubic metres.	The length of cables in Work No.1(c) and Work No.2(c) has been calculated from: • Total length of array cables (Table 3.31 of Volume 1, Chapter 3: Project Description); and • Total length of offshore interconnector cables (Table 3.49 of Volume 1, Chapter 3: Project Description). Being 830 km + 225 km = 1,055 km. The volume of cable protection in Work No.1(c) and Work No.2(c) has been calculated from: • Rock protection volume of array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); and • Rock protection volume of offshore interconnector cables (Table 3.50 of Volume 1, Chapter 3: Project Description). Being 830,000 m^3 + 225,000 m^3 = 1,055,000 m^3.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 1, 2(f)	Disposal of up to 2,218,816 cubic metres of inert material of natural origin.	The maximum design parameter has been calculated for the HVAC transmission scenario from: • Sandwave clearance for offshore export cables in the Hornsea Three offshore cable corridor (Table 3.4 of Volume 1, Chapter 3: Project Description); • Sandwave clearance for offshore export cables in the Hornsea Three array area (Table 3.5 of Volume 1, Chapter 3: Project Description); • Sandwave clearance for offshore interconnector cables (Table 3.5 of Volume 1, Chapter 3: Project Description); • Spoil volume for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); • Spoil volume for surface offshore HVAC booster station foundations (Table 3.12 of Volume 1, Chapter 3: Project Description); • HDD exit pit excavated material (Table 3.52 of Volume 1, Chapter 3: Project Description). Being 1,202,956 m^3 + 1,755 m^3 +14,105 m^3 + 735,000 m^3 + 245,000 m^3 + (2,500 m^3 * eight) = 2,218,816 m^3.	The HVAC transmission option results in the maximum design scenario. To calculate the HVDC scenario, exchange the spoil volume from Table 3.12 for the equivalent in Table 3.14 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVAC scenario and therefore is not considered the maximum design scenario.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 1, g	Disposal of up to 2,218,816 cubic metres of inert material of natural origin.	The maximum design parameter has been calculated for the HVAC transmission scenario from: • Sandwave clearance for offshore export cables in the Hornsea Three offshore cable corridor (Table 3.4 of Volume 1, Chapter 3: Project Description); • Sandwave clearance for offshore export cables in the Hornsea Three array area (Table 3.5 of Volume 1, Chapter 3: Project Description); • Sandwave clearance for offshore interconnector cables (Table 3.5 of Volume 1, Chapter 3: Project Description); • Spoil volume for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); • Spoil volume for surface offshore HVAC booster station foundations (Table 3.12 of Volume 1, Chapter 3: Project Description); • HDD exit pit excavated material (Table 3.52 of Volume 1, Chapter 3: Project Description). Being 1,202,956 m^3 + 1,755 m^3 +14,105 m^3 + 735,000 m^3 + 245,000 m^3 + (2,500 m^3 * eight) = 2,218,816 m^3.	The HVAC transmission option results in the maximum design scenario. To calculate the HVDC scenario, exchange the spoil volume from Table 3.12 for the equivalent in Table 3.14 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVAC scenario and therefore is not considered the maximum design scenario.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 1(1)	The total number of offshore electrical installations and offshore accommodation platforms shall not exceed 18, and shall consist of no more than— (a) 12 offshore type 1 substations; (b) four offshore type 2 substations; (c) four offshore HVAC booster stations; and (d) six offshore subsea HVAC booster stations.	The maximum design parameters are outlined in Table 3.9 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 2(1)(a) to (c)	The dimensions of any offshore type 1 substations forming part of the authorised project must not exceed— (a) 90 metres in height when measured from LAT; (b) 100 metres in length; and (c) 100 metres in width.	The maximum design parameters are outlined in Table 3.39 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 2(2)(a) to (c)	The dimensions of any offshore type 2 substation forming part of the authorised project must not exceed— (a) 110 metres in height when measured from LAT; (b) 180 metres in length; and (c) 90 metres in width.	The maximum design parameters are outlined in Table 3.41 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 2(3)(a) to (c)	The dimensions of any offshore HVAC booster station forming part of the authorised project must not exceed— (a) 90 metres in height when measured from LAT; (b) 100 metres in length; and (c) 100 metres in width.	The maximum design parameters are outlined in Table 3.42 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 2(4)(a) to (c)	The dimensions of any offshore subsea HVAC booster station forming part of the authorised project must not exceed— (a) 15 metres in height when measured from the seabed; (b) 50 metres in length; and (c) 50 metres in width.	The maximum design parameters are outlined in Table 3.43 of Volume 1, Chapter 3: Project Description.	-
Schedule 12, Part 2, 2(5)	Any bridge located between any offshore substation or accommodation platform shall be no longer than 100 metres.	The maximum design parameter is outlined in Table 3.35 of Volume 1, Chapter 3: Project Description.	-
Schedule 12, Part 2, 2(7)(a)	Pin pile diameter for an offshore electrical installation shall not exceed four metres.	The maximum design parameter is outlined in Table 3.24 of Volume 1, Chapter 3: Project Description.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 2(7)(b)	Monopile foundation diameter for an offshore electrical installation shall not exceed 15 metres.	The maximum design parameter is outlined in Table 3.16 of Volume 1, Chapter 3: Project Description.	-

Schedule 12, Part 2, 2(8)(a)	Total seabed footprint area for offshore electrical installation must not exceed 138,900 square metres excluding scour protection.	The maximum design parameter has been calculated for the HVDC transmission scenario from: • Seabed area structure for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); and • Seabed area structure for offshore HVDC collector substation foundations (Table 3.14 of Volume 1, Chapter 3: Project Description). Being 67,500 m^2 + 71,400 m^2 = 138,900 m^2.	Schedule 1, Part 3, 3(12)(a) and Schedule 12, Part 2, 2(8)(a) are imposing the same limitation. On review, for consistency and clarity, Schedule 1, Part 3, 3(12)(a) could include 'electrical' before 'installation' so as to ensure consistency with Schedule 12, Part 2, 2(8)(a). It would therefore state: "*The total seabed footprint area for offshore electrical installation foundations must not exceed…*". This potential modification to the wording of the Draft DCO can be considered as part of the examination process. The HVDC transmission option results in the maximum design scenario. To calculate the HVAC scenario, exchange the seabed area from Table 3.14 for the equivalent in Table 3.12 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVDC scenario and therefore is not considered the maximum design scenario.
Schedule 12, Part 2, 2(8)(b)	Total seabed footprint area for offshore electrical installation must not exceed 267,900 square metres including scour protection.	The maximum design parameter has been calculated for the HVDC transmission scenario from: • Seabed area total for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); and • Seabed area total for offshore HVDC collector substation foundations (Table 3.14 of Volume 1, Chapter 3: Project Description).	Schedule 1, Part 3, 3(12)(b) and Schedule 12, Part 2, 2(8)(b) are imposing the same limitation. On review, for consistency and clarity, Schedule 1, Part 3, 3(12)(b) could include 'electrical' before 'installation' so as to ensure consistency with Schedule 12, Part 2, 2(8)(b). It would therefore

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
		Being 158,700 m^2 + 109,200 m^2 = 267,900 m^2.	state: "*The total seabed footprint area for offshore **electrical** installation foundations must not exceed…*"). This potential modification to the wording of the Draft DCO can be considered as part of the examination process. The HVDC transmission option results in the maximum design scenario. To calculate the HVAC scenario, exchange the seabed area total from Table 3.14 for the equivalent in Table 3.12 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVDC scenario and therefore is not considered the maximum design scenario.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 2(9)	Total volume of scour protection for offshore electrical installation shall not exceed 534,400 cubic metres.	The maximum design parameter has been calculated for the HVDC transmission scenario from: • Scour protection volume for offshore transformer substation foundations (Table 3.11 of Volume 1, Chapter 3: Project Description); and • Scour protection volume for offshore HVDC collector substation foundations (Table 3.14 of Volume 1, Chapter 3: Project Description). Being 182,400 m^3 + 108,800 m^3 = 291,200 m^3.	On review, Schedule 12, Part 2, 2(9) should be updated to state: "*The volume of scour protection material for offshore electrical installation foundations must not exceed 291,200 cubic metres.*" This modification to the wording will be made at the next iteration of the Draft DCO as part of the examination process. The HVDC transmission option results in the maximum design scenario. To calculate the HVAC scenario, exchange the scour protection volume from Table 3.14 for the equivalent in Table 3.12 of Volume 1, Chapter 3: Project Description. This leads to a smaller value than that generated by the HVDC scenario and therefore is not considered the maximum design scenario.

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 3(1)	Total length of the cables in Work No.2 and Work No.3 shall not exceed 1,371 kilometres. Total volume of cable protection in Work No.2 and Work No.3 shall not exceed 1,371,000 cubic metres. Total length of the cables in Work No.5 shall not exceed three kilometres.	The length of cables in Work No.2 and Work No.3 has been calculated from: • Total length of offshore export cables (Table 3.45 of Volume 1, Chapter 3: Project Description); and • Total length of offshore interconnector cables (Table 3.49 of Volume 1, Chapter 3: Project Description). Being 1,371 km + 225 km = 1,371 km. The volume of cable protection in Work No.1(c) and Work No.2(c) has been calculated from: • Rock protection volume of offshore export cables (Table 3.46 of Volume 1, Chapter 3: Project Description); and • Rock protection volume of offshore interconnector cables (Table 3.50 of Volume 1, Chapter 3: Project Description). Being 1,146,000 m^3 + 225,000 m^3 = 1,371,000 m^3. The length of cables in Work No.5 is outlined in Table 2.14 of Volume 2, Chapter 2: Benthic Ecology.	-

Reference Draft DCO or Deemed Marine Licence (as submitted)	Description of parameter in draft DCO or Deemed Marine Licence (as submitted)	Reference to the Environmental Statement	Notes
Schedule 12, Part 2, 4	Total length of the cables in Work No.1(c) when combined with the cable authorised under Work No.2(c) shall not exceed 1,055 kilometres. Total volume of cable protection in Work No.1(c) when combined with the cable authorised under Work No.2(c) shall not exceed 1,055,000 cubic metres.	The length of cables in Work No.1(c) and Work No.2(c) has been calculated from: • Total length of array cables (Table 3.31 of Volume 1, Chapter 3: Project Description); and • Total length of offshore interconnector cables (Table 3.49 of Volume 1, Chapter 3: Project Description). Being 830 km + 225 km = 1,055 km. The volume of cable protection in Work No.1(c) and Work No.2(c) has been calculated from: • Rock protection volume of array cables (Table 3.33 of Volume 1, Chapter 3: Project Description); and • Rock protection volume of offshore interconnector cables (Table 3.50 of Volume 1, Chapter 3: Project Description). Being 830,000 m^3 + 225,000 m^3 = 1,055,000 m^3.	-