

Hornsea Offshore Wind Farm Project Two – Technical Note

Variation to the DCO – HVAC Offshore Substations

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Table of Contents

1.	Hornsea Project Two Offshore Wind Farm	3
2.	Offshore HVAC Collector Substations	3
3.	Consented Envelope for the Offshore HVAC Collector Substation Platforms	3
4.	Required Changes to the Offshore HVAC Collector Substation Platform Topside Dimensions	4
5.	Materiality of Changes	5
6.	Stakeholder Engagement	13
7.	Conclusion	14
8.	References.....	15
Appendix 1: DCO Requirements and Marine Licence Conditions Relevant to Offshore HVAC Collector Substation		16
Appendix 2: Example Offshore Substation Topside Schematic		18

1. Hornsea Project Two Offshore Wind Farm

Hornsea Project Two is the second project to be developed in the Hornsea Zone, with a total generation capacity of up to 1,800 MW. The Development Consent Order (DCO) (SI 2016 No. 844 as amended by SI 2016 No. 1104) (the “Order”) was granted on the 16 August 2016 and came into effect on 7 September 2016. Optimus Wind Limited and Breesea Limited are the named undertakers in the Order and are hereinafter together referred to as the “Applicant”. Ørsted (formerly DONG Energy Wind Power A/S) is the ultimate owner of Optimus Wind Limited and Breesea Limited. Project Two received a Contract for Difference from the Department for Business, Energy and Industrial Strategy (BEIS) on the 11th of September 2017 for 1,386 MW.

Hornsea Project Two has consent for up to 300 wind turbines and the installed capacity of each turbine will be between 6MW and 15MW. The export cable will reach landfall near Horseshoe Point, East Lindsey and the onshore cable route will be approximately 40 km long running from the landfall site to the onshore substation in North Killingholme, North Lincolnshire. Onshore construction of the project is expected to commence in Q2 2018 and offshore construction beginning in Q3 2020. Landfall construction work is currently planned for Q2 2020. It is noted that these dates are subject to change based on programme optimisation.

As a result of engineering refinement and project optimisation, the Applicant is seeking to make non-material variations to the consented parameters of the Offshore High Voltage Alternating Current (HVAC) Collector Substations which form part of the authorised development. This document has therefore been prepared in support of the applications for non-material changes to the Order pursuant to section 153 and schedule 6 of the Planning Act 2008 and for variations of the Deemed Marine Licenses pursuant to section 72(3) of the Marine and Coastal Access Act 2009.

2. Offshore HVAC Collector Substations

The offshore infrastructure required for the project includes the offshore array, comprising wind turbine generators (WTGs) and foundations, inter-array cabling, offshore converter stations, offshore collector stations and all associated infrastructure (RPS, 2015). An integral part of this offshore infrastructure includes the Offshore HVAC Collector Substations. The Offshore HVAC Collector Substations provide a centralised collection point for the inter-array cables and will transform the voltage of the electricity generated at the WTG to a higher voltage. However, instead of transmitting this power to an offshore HVDC converter substation, as in the HVDC option, they instead transmit it to shore via export cables and an offshore HVAC reactive compensation substation. The Offshore HVAC Collector Substations could also be used to provide additional reactive compensation using reactors similar to those in the HVAC reactive compensation substation (RPS, 2015).

3. Consented Envelope for the Offshore HVAC Collector Substation Platforms

The Environmental Statement (ES) as submitted with the DCO stated the following with regard to the HVAC Collector Substation worst case parameters (Chapter 3 – Project Description, Table 3.14 of ES).

Table 3.1: Offshore HVAC Collector Substation maximum design parameters (as detailed within the Hornsea Project 2 ES).

Element	Maximum	Comments
Number of Offshore HVAC Collector Substations	6	
Height of main building (m)	60	Relative to LAT
Height of tallest element, e.g.: crane, helipad, lightning rod (m)	64	Relative to LAT
Width of topside (m)	60	
Length of topside (m)	60	
Area of topside (m ²)	3,600	
Voltage (kV)	400	
Foundation Type	Monopile, Jacket, GBF (including mono suction caisson)	
Seabed area affected per platform (m ²)	12,723	Includes scour, based on Jacket (Suction Piles)
Total seabed area affected (m ²)	76,341	Includes scour, based on Jacket (Suction Piles)
Spoil Volume Per Platform (m ³)	19,242	Includes scour, based on GBF
Total spoil volume (m ³)	115,454	Includes scour, based on GBF
Total Scour Protection Volume per Platform (m ³)	22,619	Includes scour, based on Jacket (Suction Piles)
Total Scour Protection Volume (m ³)	135,717	Includes scour, based on Jacket (Suction Piles)

The DCO Requirements and Marine Licence Conditions relevant to the Offshore HVAC Collector Substation design are in **Appendix 1** of this document.

4. Required Changes to the Offshore HVAC Collector Substation Platform Topside Dimensions

The Environmental Statement considered a worst-case scenario of up to six Offshore HVAC Collector Substations within the array area, each being of a maximum size of 60m by 60m, however, following engineering refinement and project optimisation, a maximum of three Offshore HVAC Collector Substations may be required. Therefore, there will be at least a 50% reduction in the maximum number of Offshore HVAC Collector Substations required.

As part of this design refinement and optimisation work it has been established that the Offshore HVAC Collector Substation topside dimensions will need to be increased beyond the current consent envelope (i.e. the maximum dimensions of elements of the development imposed by the

Requirements in the DCO within the overall red line area). The increase in size is required because of the optimised design for a reduced number of Offshore HVAC Collector Substations (rather than up to six HVAC Collector Substations as originally consented). The solution for up to three substations needs the topsides to be increased in size to accommodate all necessary infrastructure.

Whilst the topsides need to increase in size there is no need to increase the footprint of the supporting structure's impact on the seabed, the number of legs and piles on the jacket infrastructure supporting the topside will remain the same as allowed in the DCO. This means that there will be no increase in the assessed impact upon the seabed, there will actually be a reduction as the amendment seeks to reduce the maximum number of HVAC Collector Substations to three from six.

Table 4.1: Consented and required design envelope for the Offshore HVAC Collector Substation

Offshore HVAC Collector Substation: Consented envelope				
Topside Width	Topside Length	Topside area	Height	Number of HVAC Collector Substations
60 m	60 m	3,600 m ²	64 (relative to LAT)	Up to 6
Offshore HVAC Collector Substation: Required envelope				
Topside Width	Topside Length	Topside area	Height	Number of HVAC Collector Substations
90 m	70 m	6,300 m ²	64 (relative to LAT)	Up to 3

The proposed increase in dimensions of the Offshore HVAC Collector Substation platform topsides means that the width and length for an individual platform, will be greater than that presented within the Hornsea Project Two original Design ("Rochdale") Envelope, (as detailed within Chapter 3 – Project Description, Table 3.14, of the Hornsea Project Two ES) and cited within the Project's DCO/deemed Marine Licences. A variation to the relevant sections of the DCO and variations to Marine Licences will be required.

Table 4.1 details the consented and the new required design envelopes for the Offshore HVAC Collector Substation, Figure A in Appendix 2 presents a schematic of the proposed topside to be used. A draft amendment Order to give effect to the proposed DCO changes only has been provided along with the application.

5. Materiality of Changes

There is no statutory definition of what constitutes a material or non-material amendment for the purposes of Schedule 6 to the Planning Act 2008 and Part 1 of the 2011 Regulations.

Criteria for determining whether an amendment should be material or non-material is outlined in the Department for Communities and Local Government (DCLG's) "Guidance on Changes to Development Consent Orders" (December 2015). The following characteristics are stated to indicate that an amendment is more likely to be considered material¹.

- 1) Where any new or significant effects on the environment as a result of the change mean that an

update to the original Environmental Statement (from that at the time the original DCO was made) is required (to take account of those effects);

- 2) Where the impact of the development to be undertaken as a result of the proposed change introduces the need for a new Habitats Regulations Assessment, or the need for a new or additional licence in respect of European Protected Species (EPS) (in addition to those at the time the original DCO was made);
- 3) Where the change would involve compulsory acquisition of any land or an interest in or rights over land, that was not authorised through the existing DCO; or
- 4) The potential impact of the proposed changes on local people will also be a consideration in determining whether a change is material.

The proposed variation to the DCO in relation to the changes to the Offshore HVAC Collector Substation platform layout has been considered in light of these four characteristics as follows.

- 1) *Where any new or significant effects on the environment as a result of the change mean that an update to the original Environmental Statement (from that at the time the original DCO was made) is required (to take account of those effects).*

Table 5.1 compares the environmental topics and the potential effects and impacts that were identified within the Hornsea Project Two ES with the changes proposed to the Offshore HVAC Collector Substation platform designs. Consideration has been given to the effects of the proposed changes and whether these changes could result in impacts of significance (in EIA terms) or greater significance to those identified in the existing assessment as submitted to the Secretary of State in 2015. It is noted that the focus of this review is on the offshore receptors only, as no onshore receptor could be affected by the construction, operation and or decommissioning of the Offshore HVAC Collector Substation.

Table 5.1 concludes that the potential impacts associated with the proposed changes to the Offshore HVAC Collector Substation platform dimensions are of no greater significance than those identified in the original Hornsea Project Two ES. In addition, the worst-case scenario for the number of Offshore HVAC Collector Substations that was assessed within the ES was based on an assumption of there being up to six structures, which has now reduced to a maximum of three structures. There will therefore be a reduction in the amount of construction activity, installed infrastructure required and subsequently the area of seabed affected, as compared to the original worst-case scenario.

Table 5.1: Assessment of the changes to the design parameters of the platform for the Offshore HVAC Collector Substation and their effect on EIA topic impact significance

EIA Topic	Change in Project Parameters	Changes in Effect	Change in Impact Significance
Marine Processes	Increases in the width and length of the Offshore HVAC Collector Substation platform.	<p>Effects identified on marine processes associated with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • increased suspended sediment concentrations and deposition of material on the seabed • changes to seabed morphology hydrodynamics and sediment regime • changes to tidal, wave and sediment regime • Accidental pollution events <p>There will be no change to the magnitude of these effects as a result of the change in the project parameters.</p>	<p>The impacts identified are caused by the physical presence of the substations and their below sea level infrastructure (namely their foundations), not the precise plan form of the above sea level platform structure. The increased platform size does not require a change in the foundation size. The dimensions of the platforms are not referred to as part of the worst case in the assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance.</p>
Benthic Subtidal and Intertidal Ecology	Increases in the width and length of the Offshore HVAC Collector Substation platform.	<p>Effects identified on benthic subtidal and intertidal ecology associated with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • temporary habitat disturbance and loss • increased suspended sediment concentrations and deposition • long term habitat loss • introduction of new habitat • habitat disturbance via scour and vessel activities during operation • sediment disturbance leading to release of sediment contaminants • accidental pollution events <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>The impacts identified are caused by the physical presence of the substations and their below sea level infrastructure (namely their foundations), not the precise plan form of the above sea level platform structure. The increased platform size does not require a change in the foundation size. The dimensions of the platforms are not referred to as part of the worst case in the assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance.</p>
Fish and Shellfish Ecology	Increases in the width and length of the Offshore HVAC Collector Substation platform.	Effects identified on fish and shellfish ecology associated with the construction, operation and decommissioning of Hornsea Project Two within	The impacts identified are associated with the physical presence of the below sea level infrastructure (namely the foundations), and the piling activities required to install these foundations, not the precise plan form of

EIA Topic	Change in Project Parameters	Changes in Effect	Change in Impact Significance
		<p>the ES included:</p> <ul style="list-style-type: none"> • temporary habitat disturbance • increased suspended sediment concentrations • sediment deposition • underwater noise • sediment disturbance leading to release of sediment contaminants • long term habitat loss • electric and magnetic field emissions from subsea cables • introduction of new habitat • potential for reduced fishing pressure during operation • accidental pollution events <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>the above sea level structure. The increased platform size does not require a change in the foundation size. The dimensions of the platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance.</p>
Marine Mammals	Increases in the width and length of the Offshore HVAC Collector Substation platform	<p>Effects identified on marine mammals associated with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • underwater noise • increased vessel traffic • increased suspended sediments • changes to prey resources • accidental release of contaminants and electric and magnetic effects from subsea cables • accidental pollution events <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>The impacts identified are associated with the physical presence of the below sea level infrastructure, (namely the foundations), and the piling required to install these foundations, not the precise plan form of the above sea level structure. The increased platform size does not require a change in the foundation size. The dimensions of the platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance</p>
Ornithology	Increases in the width and length of the	Effects identified on ornithology associated with	The impacts identified are caused by the physical

EIA Topic	Change in Project Parameters	Changes in Effect	Change in Impact Significance
	Offshore HVAC Collector Substation platform	<p>the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • disturbance-displacement impacts • habitat loss • accidental pollution events • collision mortality • barrier effects • indirect effects associated with impacts on prey items • accidental pollution events <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>presence and spatial layout of the substations not the precise plan form of the above sea level structure. The dimensions of the above sea level substation platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance.</p>
Commercial Fisheries	Increases in the width and length of the Offshore HVAC Collector Substation platform	<p>Effects identified on commercial fisheries associated with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • reduction in access or exclusion from fishing grounds • displacement or disruption • gear snagging • ecological effects upon targets species <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>The impacts are associated with the physical presence and spatial layout of the substations. The dimensions of the above sea level substation platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance.</p>
Shipping and Navigation	Increases in the width and length of the Offshore HVAC Collector Substation platform	<p>Effects identified on shipping and navigation associated with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • displacement of commercial shipping, fishing vessels and recreational vessels leading to an increased vessel to vessel collision risk • anchor snagging 	<p>The impacts identified are caused by the physical presence of the substations and their spatial layout, not the platform design of the above sea level substation structure. The dimensions of the above sea level substation platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p>

EIA Topic	Change in Project Parameters	Changes in Effect	Change in Impact Significance
		<p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>There will therefore be no change in impact significance.</p>
<p>Aviation, Military and Communications</p>	<p>Increases in the width and length of the Offshore HVAC Collector Substation platform</p>	<p>Effects identified on aviation, military and communications associated with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • interference with operations within MOD Danger Areas • disruption to Helicopter Main Routes (HMR) • disruption to cross-zone transit helicopter traffic • disruption of instrument approach procedures and Missed Approach Procedures (MAPs) to and from, offshore oil and gas platforms • disruption to civil and military radar cover, obstruction to Search and Rescue helicopter operations • interference with microwave and other communication links <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>The impacts identified are caused by the physical presence of the substations and their spatial layout, not the platform design of the above sea level substation structure. The dimensions of the above sea level substation platforms are not referred to in the worst-case assessment within this chapter of the Environmental Statement</p> <p>There will therefore be no change in impact significance</p>
<p>Marine Archaeology and Ordinance</p>	<p>Increases in the width and length of the Offshore HVAC Collector Substation platform</p>	<p>Effects identified on marine archaeology and ordinance with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> • removal or disturbance of sediments of geoarchaeological significance or the disturbance of sediments resulting in a potential effect on near-surface prehistoric land surfaces. • destruction of wrecks and/or aircraft wrecks 	<p>The impacts identified are caused by the below sea level infrastructure of the substations (namely their foundations) and not the above sea level infrastructure. The dimensions of the substation platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p> <p>There will be no change in impact significance.</p>

EIA Topic	Change in Project Parameters	Changes in Effect	Change in Impact Significance
		<ul style="list-style-type: none"> potential effect on deeply buried prehistoric land surfaces and a variety of heritage assets <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	
Seascape and Visual Resources	Increases in the width and length of the Offshore HVAC Collector Substation platform	<p>Effects identified on seascape and visual resources, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> a change to the existing present day seascape character and Historic Seascape Character (HSC) a change to the current visual day and night-time scenario experienced by visual receptors <p>The increase in the length, width and individual area of the Offshore HVAC Collector Substation platforms are marginal and there will be a reduction to three Offshore HVAC Collector Substation platforms, compared to the maximum of 6 assessed within the ES. There will be no increases in the height of any structure. As a result, there will be no change in the magnitude of these effects as a result of these changes in the project parameters.</p>	<p>It is necessary to increase the width and length of the Offshore HVAC Collector Substation platform. The required increases will not have an impact on the seascape character and HSC as the fundamental nature of the structure will be unchanged. Furthermore, there will be a reduction to three Offshore HVAC Collector Substation platforms, compared to the maximum of 6 assessed within the ES.</p> <p>The increases in the length and width of the platforms do not deviate extensively from the assessment ES and will not result in a change in the significance of the impact on any visual receptors assessed within this chapter of the Environmental Statement.</p> <p>There will therefore be no change in impact significance.</p>
Infrastructure and Other Uses	Increases in the width and length of the Offshore HVAC Collector Substation platform	<p>Effects identified on infrastructure and other uses with the construction, operation and decommissioning of Hornsea Project Two within the ES included:</p> <ul style="list-style-type: none"> displacement of recreational vessels disturbance to cables and pipelines and aggregate areas disruption to oil and gas operations including the interference with Radar Early Warning Systems (REWS) on gas platforms increase in airborne noise 	<p>The impacts identified include the physical presence and the spatial layout of the substations and not the platform designs of the substation structures. The dimensions of the above sea level substation platforms are not referred to in the worst-case assessment undertaken within this chapter of the Environmental Statement.</p> <p>Therefore, there will be no change in impact significance.</p>

EIA Topic	Change in Project Parameters	Changes in Effect	Change in Impact Significance
		<p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	
<p>Inter-Related Effects (Offshore)</p>	<p>Increases in the width and length of the Offshore HVAC Collector Substation platform</p>	<p>The overall significance of any inter-related effects was not judged to increase the individual effects assessed in the topic-specific chapters within the Hornsea Project Two ES.</p> <p>There will be no change in the magnitude of these effects as a result of the change in the project parameters.</p>	<p>There is no change in the impact significance of any parameter within the Environmental Statement topic chapters which would lead to a change to any of the inter-related effects.</p> <p>There will therefore be no change in impact significance.</p>

- 2) *Where the impact of the development to be undertaken as a result of the proposed change introduces the need for a new HRA, or the need for a new or additional licence in respect of EPS (in addition to those at the time the original DCO was made).*

The changes to the Offshore HVAC Collector Substation topside maximum dimensions will not introduce the need for a new HRA or EPS. This conclusion is reached based on the same justification as those which have led to the conclusion that there is no change to the EIA impact significance (see **Table 5.1**). The key potential for impact arises from the physical presence of the substations and their below sea level infrastructure, rather than their precise, above sea level platform dimensions. The changes give rise to no additional impact in HRA or EPS terms.

- 3) *Where the change would involve compulsory acquisition of any land or an interest in or rights over land, that was not authorised through the existing DCO.*

The proposed change applies to activities being undertaken within the existing DCO Order limits and on land that will be leased to the project by The Crown Estate. As such, the possible requirement for compulsory acquisition does not arise.

- 4) *The potential impact of the proposed changes on local people will also be a consideration in determining whether a change is material.*

The proposed change will be located at least 89 km from shore and not visible from the coastline area. It is therefore not a change that will impact local people.

6. Stakeholder Engagement

The Project Two companies have conducted a programme of informal pre-application consultation to brief stakeholders on the nature of the proposed DCO variations. Pre-application meetings or written consultation has been conducted with:

- Department of Business, Energy and Industrial Strategy (DBEIS);
- Natural England;
- Marine Management Organisation (MMO);
- Civil Aviation Authority (CAA);
- Maritime and Coastguard Agency (MCA);
- Trinity House (TH);
- National Federation of Fishermen's Organisations (NFFO);
- Danish Fish Producer's Organisation;
- VisNed (Dutch Fisheries);
- Historic England;
- The Crown Estate;
- Hornsea Project One undertakers;
- Uniper UK Gas Limited (formerly E.ON UK Gas Limited) c/o Company Secretary;
- Centrica Resources Limited; and
- ConocoPhillips (UK) Limited.

7. Conclusion

Taking into account the above responses to the four considerations, as set out in the DCLG guidance, it is the opinion of the Applicant that the proposed changes to the DCO and Marine Licenses in relation to the Offshore HVAC Collector Substation platforms should be regarded as a non-material amendment.

For the avoidance of doubt, whether or not the first non-material change application currently before the Secretary of State for determination is granted, there will be no impact to the predicted effects of this non-material change application (due in a large part to the very distinct and separate geographical locations of the changes).

8. References

Department of Climate Change (2011) Decommissioning of offshore renewable energy installations under the Energy Act 2004. Guidance Note for Industry. January 2011 (revised).

Department for Communities and Local Government (2015) Planning Act 2008: Guidance on changes to Development Consent Orders. December 2015.

Infrastructure Planning (Changes to, and revocation of, Development Consent Orders) Regulations 2011 ("the 2011 Regulations").

Infrastructure Planning (Changes to, and Revocation of, Development Consent Orders) (Amendment) Regulations 2015.

RPS (2015) Hornsea Offshore Wind Farm Project Two Environmental Statement Volume 1 – Introductory Chapters. Chapter 3 -Project Description PINS Document Reference: 7.1.3. January 2015.

Appendices

Appendix 1: DCO Requirements and Marine Licence Conditions Relevant to Offshore HVAC Collector Substation

DCO
<p>SCHEDULE 1 Authorised Project PART 1 Authorised development</p> <p>Paragraph 3(1) Work No. 2A and 2B</p>
<p>Subject to sub-paragraph (2), up to 6 offshore HVAC collector substations and, in the event that the mode of transmission is HVDC, up to 2 offshore HVDC converter substations together with a network of electrical circuits connecting the structures within Work Nos. 2A and 2B.</p>
<p>SCHEDULE 1 Authorised Project PART 1 Authorised development</p> <p>Paragraph 3(2) Work No. 2A and 2B</p>
<p>The combined total of offshore HVAC collector substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed 6, and the combined total of offshore HVDC converter substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed 2.</p>
<p>SCHEDULE 1 Authorised Project PART 3 Requirements</p> <p>Paragraph 2(4)</p>
<p>Detailed design parameters</p> <p>(4) No offshore HVAC collector substation forming part of Work No. 2A or 2B may—</p> <p>(a) exceed 64 metres in height above LAT;</p> <p>(b) have a platform that at its greatest extent exceeds 3,600 square metres in area or 60 metres in width.</p>

Marine Licences
<p>SCHEDULE 9 Marine Licence A2: Project A – Transmission Assets</p> <p>Part 1 Licensed activities</p>
<p>Work No. 2A -</p> <p>Up to 6 offshore HVAC collector substations and, in the event that the mode of transmission is HVDC, up to 2 offshore HVDC converter substations together with a network of electrical circuits connecting the structures within Work Nos. 2A and 2B, provided that—</p> <p>(a) the combined total of offshore HVAC collector substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed 6; and</p> <p>(b) the combined total of offshore HVDC converter substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed 2.</p>
<p>SCHEDULE 9</p> <p>Part 2 Licence Conditions</p> <p>Design Parameters</p>

Marine Licences
<p>1.—(1) No offshore HVAC collector substation forming part of Work No. 2A may—</p> <p>(a) exceed 64 metres in height above LAT;</p> <p>(b) have a platform that at its greatest extent exceeds 3,600 square metres in area or 60 metres in width.</p>
<p>SCHEDULE 11 Marine Licence B2: Project B – Transmission Assets</p> <p>Part 1 Licensed activities</p>
<p>Work No. 2B -</p> <p>Up to 6 offshore HVAC collector substations and, in the event that the mode of transmission is HVDC, up to 2 offshore HVDC converter substations together with a network of electrical circuits connecting the structures within Work Nos. 2A and 2B, provided that—</p> <p>(a) the combined total of offshore HVAC collector substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed 6; and</p> <p>(b) the combined total of offshore HVDC converter substations constructed in whole or in part within Work Nos. 2A and 2B must not exceed 2.</p>
<p>SCHEDULE 11</p> <p>Part 2 Licence Conditions</p> <p>Design Parameters</p>
<p>1.—(1) No offshore HVAC collector substation forming part of Work No. 2B may—</p> <p>(a) exceed 64 metres in height above LAT;</p> <p>(b) have a platform that at its greatest extent exceeds 3,600 square metres or 60 metres in width.</p>

Appendix 2: Example Offshore Substation Topside Schematic

