



White Cross Offshore Windfarm Environmental Statement

Chapter 1: Introduction



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Glossary of Acronyms

Acronym	Definition
AfL	Agreement for Lease
BEIS	Department for Business, Energy and Industrial Strategy
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
HRA	Habitats Regulation Assessment
IEMA	Institute of Environmental Management and Assessment
MMO	Marine Management Organisation
NGC	National Grid Company
OFTO	Offshore Transmission Owner
OWL	Offshore Wind Ltd
UK	United Kingdom

Glossary of Terminology

Defined Term	Description
Applicant	Offshore Wind Limited
Department for Business, Energy and Industrial Strategy (BEIS)	Government department that is responsible for business, industrial strategy, science and innovation and energy and climate change policy and consent under Section 36 of the Electricity Act.
Environmental Impact Assessment (EIA)	Assessment of the potential impact of the proposed Project on the physical, biological, and human environment during construction, operation, maintenance, and decommissioning.
Export Cable Corridor	The area in which the export cables will be laid, either from the Offshore Substation or the inter-array cable junction box (if no offshore substation), to the NGC Onshore Substation comprising both the Offshore Export Cable Corridor and Onshore Export Cable Corridor.
Generation Assets	The infrastructure of the Offshore Project related to the generation of electricity within the Windfarm Site, including wind turbine generators, substructures, mooring lines, seabed anchors and inter-array cables
Inter-array cables	Cables which link the wind turbines to each other and the Offshore Substation Platform, or at the inter-array cables junction box (if no offshore substation). Array cables will connect the wind turbines to one and other and to the Offshore Substation (if utilised). The initial section for the inter-array cables will be freely suspended in the water column below the substructure (dynamic sections) while the on seabed sections of the cables will be buried where possible.
Jointing bay	Underground structures constructed at regular intervals along the Onshore Export Cable Corridor to join sections of cable and facilitate installation of the cables into the buried ducts
Landfall	Where the offshore export cables come ashore (up to MHWS)
Link boxes	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links
Mean high water springs	The average tidal height throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest.
Mean low water springs	The average tidal height throughout a year of two successive low waters during those periods of 24 hours when the range of the tide is at its greatest.
Mitigation	Mitigation measures have been proposed where the assessment identifies that an aspect of the development is likely to give rise to significant environmental impacts and discussed with the relevant authorities and stakeholders in order to avoid, prevent or reduce impacts to acceptable levels.

Defined Term	Description
	<p>For the purposes of the EIA, two types of mitigation are defined:</p> <ul style="list-style-type: none"> Embedded mitigation: consisting of mitigation measures that are identified and adopted as part of the evolution of the project design, and form part of the project design that is assessed in the EIA. <p>Additional mitigation: consisting of mitigation measures that are identified during the EIA process specifically to reduce or eliminate any predicted significant impacts. Additional mitigation is therefore subsequently adopted by OWL as the EIA process progresses.</p>
NGC Onshore Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of the electrical transformers.
NGC Grid Connection	The point at which the White Cross Offshore Windfarm connects into the distribution network at East Yelland substation and the distributed electricity network. From East Yelland substation electricity is transmitted to Alverdiscott where it enters the national transmission network.
Offshore Infrastructure	All of the offshore infrastructure including wind turbine generators, substructures, mooring lines, seabed anchors, Offshore Substation Platform and all cable types (export and inter-array). This encompasses the infrastructure that is the focus of this application and Environmental Statement and the parts of the Offshore Project consented under Section 36 of the Electricity Act and the Marine and Coastal Access Act 2009
the Offshore Project	The Offshore Project for the offshore Section 36 and Marine Licence application includes all components offshore of MHWS. This includes the infrastructure within the Windfarm Site (e.g., wind turbine generators, substructures, mooring lines, seabed anchors, inter-array cables and Offshore Substation Platform (as applicable)) and all infrastructure associated with the export cable route and landfall (up to MHWS) including the cables and associated cable protection (if required).
Offshore Substation Platform	A fixed structure located within the Windfarm Site, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore
Offshore Transmission Owner	An OFTO, appointed in UK by Ofgem (Office of Gas and Electricity Markets), has ownership and responsibility for the transmission assets of an offshore windfarm.
Offshore Wind Limited	Offshore Wind Ltd (OWL) is a joint venture between Cobra Instalaciones Servicios, S.A., and Flotation Energy Ltd
the Project	the Project is a proposed floating offshore windfarm called White Cross located in the Celtic Sea with a capacity of up to 100MW. It encompasses the project as a whole i.e., all onshore and offshore infrastructure and activities associated with the Project
Transition joint bay	Underground structures at the Landfall that house the joints between the offshore export cables and the onshore export cables

Defined Term	Description
White Cross Offshore Windfarm	100MW capacity offshore windfarm including associated onshore and offshore infrastructure
Windfarm Site	The area within which the wind turbines, Offshore Substation Platform and inter-array cables will be present
Works completion date	Date at which construction works are deemed to be complete and the windfarm is handed to the operations team. In reality, this may take place over a period of time.

1. Introduction

1.1 Introduction

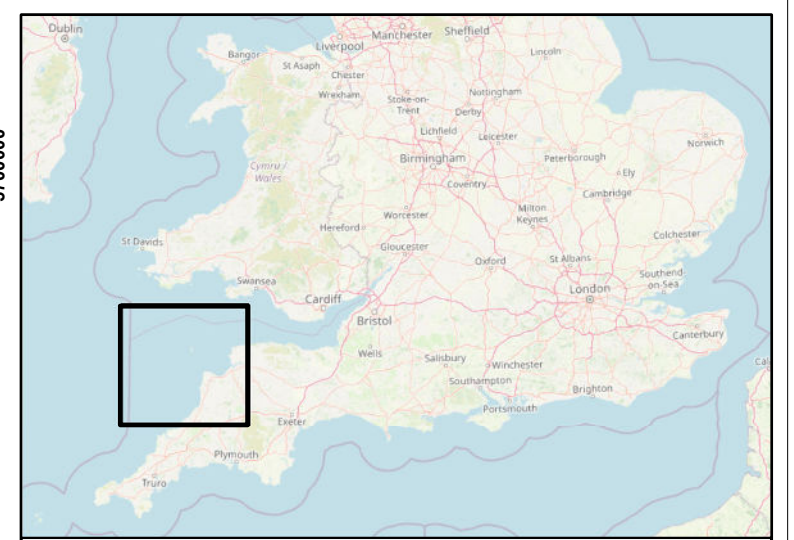
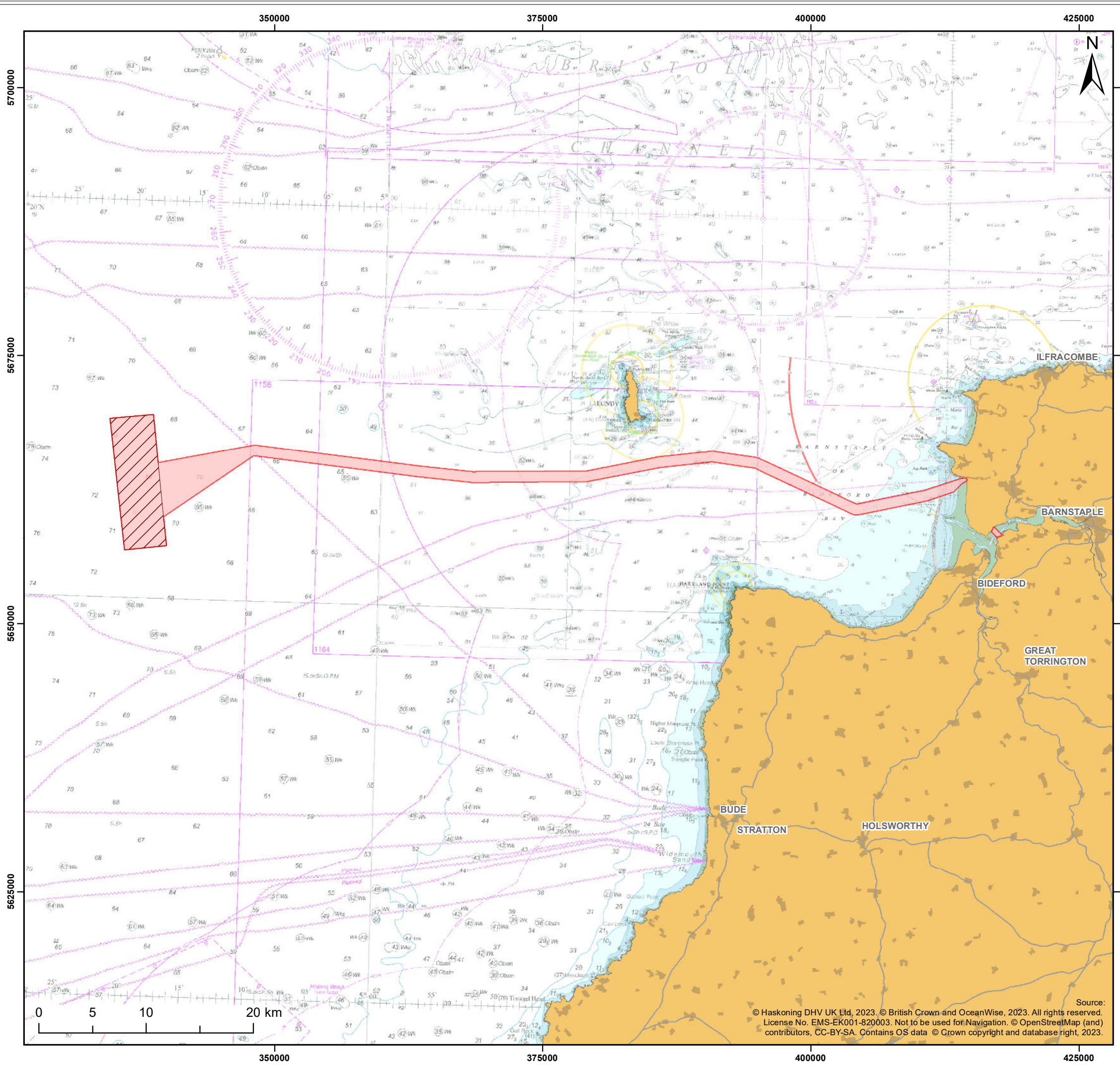
1. White Cross Offshore Windfarm is a proposed floating offshore windfarm located in the Celtic Sea (**Figure 1.1**) with a capacity of up to 100MW (hereafter referred to as 'the Offshore Project'). The Offshore Project requires Section 36 consent and Marine Licences for all components seaward of Mean High Water Springs (MHWS). This includes the infrastructure within the Windfarm Site (e.g., wind turbine generators, substructures, mooring lines, seabed anchors, inter-array cables and Offshore Substation Platform (as applicable)) and all infrastructure associated with the offshore export cable, Landfall (up to MHWS) and the crossing underneath the Taw Estuary (from MHWS to MHWS).
2. The Offshore Project is being developed by Offshore Wind Ltd (OWL) a joint venture between Cobra Instalaciones Servicios, S.A., and Flotation Energy Ltd.
3. The Offshore Project will help achieve the UK Government's commitment to net zero by 2050 and tackle the climate emergency by producing electricity from renewable energy. The Offshore Project was selected in 2021 as part of The Crown Estate's Test and Demonstration leasing opportunity.
4. The Windfarm Site is located over 52km off the North Cornwall and North Devon coast (west-northwest of Hartland Point). The Offshore Export Cable will connect the Offshore Substation Platform (OSP) to shore. The Offshore Export Cable will come ashore at a Landfall (up to MHWS) at Saunton Sands on the North Devon Coast.
5. Above MHWS at Landfall, it will be connected to the onshore export cable via a Transition Joint Bay located in Saunton Sands Car Park. The onshore export cable travels approximately 8km at its maximum inland to a high voltage alternating current (HVAC) onshore substation. This will include a crossing below the Taw Estuary using trenchless technology. A new White Cross Onshore Substation will be constructed to accommodate the connection of the Offshore Project to the existing National Grid (NGC) East Yelland Substation (see **Figure 1.2**) and grid connection point. Further detail of these onshore components will be described and assessed within the Onshore Project ES.
6. A full project description of the Offshore Project is given in **Chapter 5: Project Description**.

7. The set of consents/permission required in order for the Project to proceed are outlined below:
- Consent under the Section 36 of the Electricity Act 1989 (S.36) and a Marine Licence under the Marine and Coastal Access Act 2009 (MCAA 2009) are required for the following generation assets (within the Windfarm Site):
 - Wind Turbine Generators
 - Semi-submersible floating platforms
 - Subsea catenary mooring lines
 - Anchoring solutions (drag embedment anchors, suction anchor or pin piles)
 - Inter-array cables and associated protection
 - Other associated offshore infrastructure, such as navigational markers.
 - A second Marine Licence is required to enable the option for an Offshore Transmission Owner (OFTO) to be appointed under The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2015 for the following transmission assets (to Mean High Water Springs):
 - Offshore Substation Platform
 - Offshore export cable
 - Other associated offshore infrastructure, such as navigational markers.
 - Planning permission under the Town and Country Planning Act 1990 (TCPA 1990) is required for the Onshore Project (landward of Mean Low Water Springs):
 - Offshore export cables (above MLWS)
 - Onshore export cables
 - White Cross Onshore Substation
 - Onshore export cables (66kV from landfall (up to MHWS) to onshore substation and 132kV from the White Cross Onshore Substation to NGC Grid Connection)
 - Temporary main construction compound and temporary construction compounds
 - Transition Joint Bay, jointing bays, link boxes, access roads and haul roads
 - Grid connection.
8. Further detail on the consenting regime and relevant legislation is presented in **Chapter 3: Policy and Legislative Context.**

1.2 Purpose of this Document

9. This document is the Environmental Statement (ES) for the Offshore Project. This ES describes the potential environmental impacts associated with the offshore

Project which may arise from construction, operation, maintenance, and decommissioning of the offshore Project. The purpose of this ES is to provide the necessary information and impact assessments undertaken as required under the 'Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017' and the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (herein 'the EIA Regulations'). The ES is being submitted as part of an application for two Marine Licences (covering generation and transmission) and a consent under Section 36 of the Electricity Act 1989. Further information on the legislative context for the offshore Project is provided in **Chapter 3: Policy and Legislative Context**.



Legend:
 Windfarm Site
 Offshore Development Area

Client:	Project:
Offshore Wind Ltd.	White Cross Offshore Windfarm
Title: Project Location	

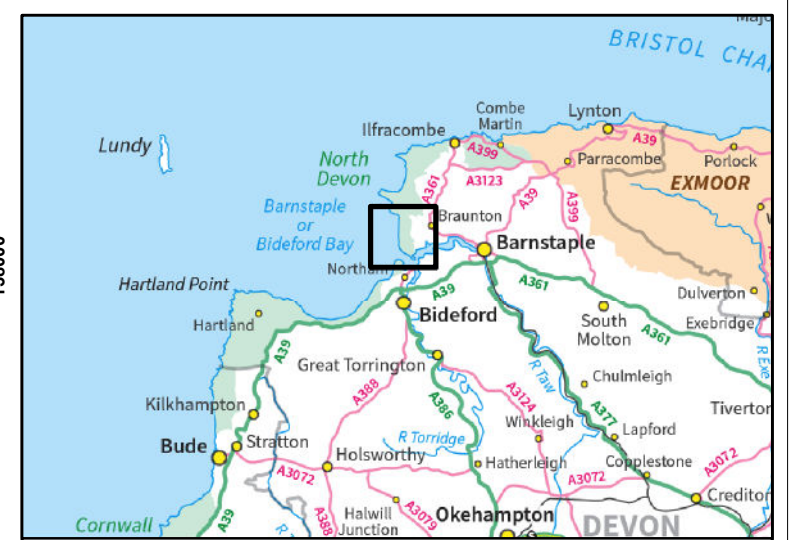
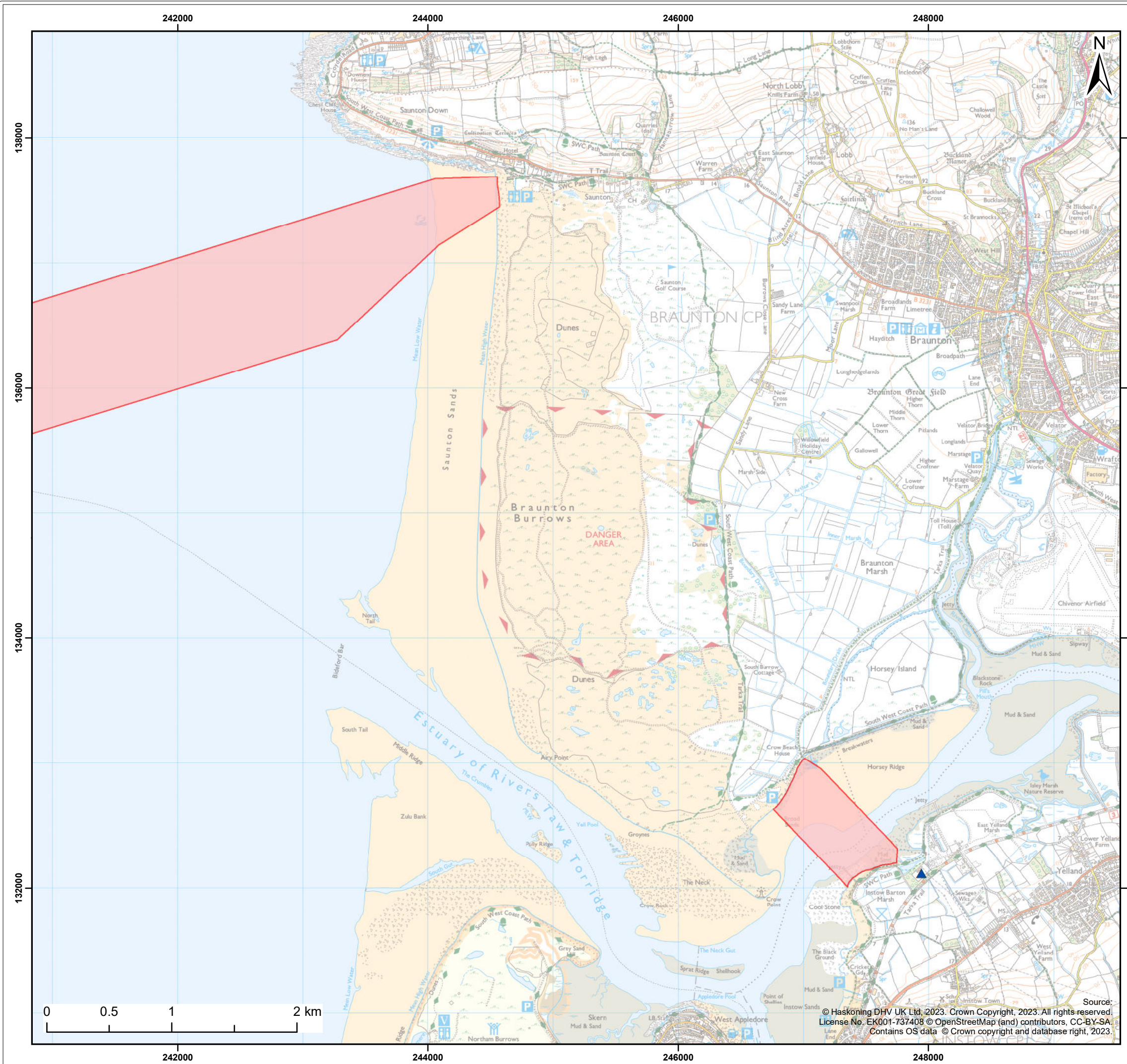
Figure: 1.1	Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0466
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Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P02	03/03/2023	AB	CB	A3	1:350,000
P01	03/01/2023	AB	CB	A3	1:350,000

Co-ordinate system: WGS 1984 UTM Zone 30N




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Legend:
 Offshore Development Area
 National Grid Onshore Substation

Client: Offshore Wind Ltd.
 Project: White Cross Offshore Windfarm

Title: Landfall (up to MHWS) and the Taw Estuary Crossing (from MHWS to MHWS)

Figure: 1.2 Drawing No: PC2978-RHD-ZZ-XX-DR-Z-0566

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	08/03/2023	GC	CB	A3	1:30,000

Co-ordinate system: British National Grid




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10. This ES has been informed by a Scoping Opinion (Case reference: EIA/2022/00002) from the Marine Management Organisation (MMO), on behalf of the Secretary of State for Business, Energy and Industrial Strategy (BEIS), that was received in May 2022. Feedback from consultation has also been used to inform the final design and impact assessment for the offshore Project. This is described in **Chapter 7: Consultation**.

1.3 The Project Team

1.3.1 Offshore Wind Limited

11. OWL has delivered the Kincardine Floating Offshore Windfarm project and also secured development rights for the 480MW Morecambe offshore wind project in the Irish Sea. OWL is also working on further developments in the UK, Ireland and Taiwan.

1.3.2 Royal HaskoningDHV

12. Royal HaskoningDHV was commissioned by OWL as the consultant to lead the White Cross EIA. Royal HaskoningDHV has been supported through the EIA process by several sub-consultants who are responsible for particular specialist topics. Royal HaskoningDHV is an environmental and engineering consultancy with significant expertise in offshore renewable energy.
13. Royal HaskoningDHV has provided environmental, development and consenting support on over 14GW of renewable energy projects across 26 UK offshore wind farms. Their EIA activities and ESs are accredited by the Institute of Environmental Management and Assessment (IEMA) under the EIA Quality Mark Scheme. This demonstrates Royal HaskoningDHV's commitment to ensuring the EIA process is delivered to a high quality and in accordance with best practice.

1.4 Purpose of the Project

14. Climate change is a global issue resulting from the anthropogenic increase of carbon emissions into the atmosphere. Generating and harnessing energy from renewable sources is a vital step to substantially reducing carbon emissions whilst aiding in the challenge of meeting energy demand as part of a balanced energy portfolio.
15. The Climate Change Act 2008 (2050 Target Amendment) Order 2019 enshrines into UK law a commitment that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline i.e., 'net zero'. Floating wind will be essential

for the UK to meet net zero emissions by 2050. The Project will support the Government's target to deliver 1GW of floating wind capacity in UK waters by 2030.

16. The Project has been brought forward through The Crown Estate's Test & Demonstration leasing opportunity which is designed to support the development and commercialisation of innovative energy technologies that will be vital to the UK's future energy system and net zero transition. The Offshore Project will test new foundation and mooring technologies, using new designs, materials and construction approaches. It also aims to play an important role in supporting the development and momentum of the regional supply chain, helping support new jobs, skills and economic growth.
17. By generating low carbon, renewable electricity in the UK, the Offshore Project will also help to reduce the UK's reliance on imported energy. Further detail is provided in **Chapter 2: Need for the Project** and **Chapter 3: Policy and Legislative Context**.

1.5 EIA Process

18. The overall objective of the EIA process is to identify any likely significant effects and for any adverse effects to be avoided, minimised, or where not possible mitigated. The process also aims to identify opportunities for beneficial impacts.
19. This ES details the EIA undertaken for the offshore components of the Offshore Project. It has been prepared in accordance with the statutory procedures set out in the applicable EIA regulations, namely:
 - The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2017 (the Electricity Works EIA Regulations)
 - The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (the Marine Works EIA Regulations).
20. These regulations transpose the requirements of the EU EIA Directives with regards to Section 36 and Marine Licence respectively. Following the UK's exit from the EU and end of transition period on 31 December 2020, legislation has been passed to retain the domestic effect in the UK of some EU laws subject to amendments to reflect the change in their status within the UK while ensuring continuity. This includes EIA, for which the Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018 were introduced. The regulations aim to ensure that environmental considerations continue to be taken into account at the development consent stage. These have been taken into account throughout this

ES. The EU Exit regulations do not make substantive changes to the way the EIA regime operates in England and Wales.

21. Consultation has been undertaken in parallel with the EIA, utilising the Evidence Plan Process (EPP) commonly used on Nationally Significant Infrastructure Projects (NSIPs) in England. The EPP is a non-statutory, voluntary process, and there are no legal obligations associated with it. The EPP is a mechanism to help agree the information needed in the EIA and HRA. The EPP has been formulated to fit with the Section 36 consent application process. Although the EPP is not part of the formal consultation, it provides the audit trail for documents produced by OWL, which will be formally consulted upon. The EPP has been progressed with a range of key stakeholders to help co-ordinate responses and identify issues and solutions in advance of any application. This is detailed in **Chapter 7: Consultation**.
22. The EIA has been progressed using a proportionate approach to ensure the process and outputs are as efficient, focussed and effective as possible. This responds directly to known issues within the UK planning regime of overly long and complex documentation and unfocussed assessments. The benefits of delivering proportionate EIA, as defined by IEMA (IEMA, 2017) are to:
 - Drive collaborative action and understanding across the EIA community
 - Focus assessments so their findings are accessible to all stakeholders
 - Reduce uncertainty and risk within project consenting
 - Save time and costs for developers, consenting authorities and consultees
 - Allow more time to be spent exploring the delivery of environmental improvements.
23. Further discussion on the proportional approach adopted, additional details of the tools and measures identified above, and the processes embedded into the Offshore Project are set out in **Chapter 6: EIA Methodology**.

1.6 Structure of this ES

24. This ES covers the Offshore Project. **Table 1.1** outlines the chapters included in the ES.

Table 1.1 Structure of the ES

Section	Chapter
Introductory	Chapter 1: Introduction to the White Cross OWF Project
	Chapter 2: Need for the Project
	Chapter 3: Policy and Legislative Context
	Chapter 4: Site Selection and Assessment of Alternatives
	Chapter 5: Project Description
	Chapter 6: EIA Methodology
	Chapter 7: Consultation
Offshore	Chapter 8: Marine Geology, Oceanography and Physical Processes
	Chapter 9: Marine Water and Sediment Quality
	Chapter 10: Benthic and Intertidal Ecology
	Chapter 11: Fish and Shellfish Ecology
	Chapter 12: Marine Mammal and Marine Turtle Ecology
	Chapter 13: Offshore Ornithology
	Chapter 14: Commercial Fisheries
	Chapter 15: Shipping and Navigation
	Chapter 16: Marine Archaeology and Cultural Heritage
	Chapter 17: Civil and Military Aviation
	Chapter 18: Infrastructure and Other Users
	Chapter 19: Offshore Seascape, Landscape and Visual Amenity
	Chapter 20: Onshore Ecology and Ornithology
	Chapter 21: Noise and Vibration
	Chapter 22: Traffic and Transport
Scheme Wide Aspects	Chapter 23: Socio-Economics (including Tourism and Recreation)
	Chapter 24: Human Health
	Chapter 25: Climate Change
	Chapter 26: Accidents and Disasters
	Chapter 27: Inter-relationships
Miscellaneous	Chapter 28: References

1.7 References

Committee on Climate Change (2019). Net Zero – The UK’s contribution to stopping global warming. Online. Net Zero - The UK's contribution to stopping global warming - Climate Change Committee (theccc.org.uk). [Accessed February 2023].

IEMA (2017). Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice. Online. IEMA - Delivering Proportionate EIA. [Accessed February 2023].