

Outer Dowsing Offshore Wind

Environmental Statement

Chapter 1 Introduction

Volume 1

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- No appendices associated with this chapter.

Acronyms & Definitions

Abbreviations / Acronyms

Abbreviation / Acronym	Description
AfL	Agreement for Lease
BEIS	Department for Business, Energy & Industrial Strategy (now the Department for Energy Security and Net Zero (DESNZ))
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
ECC	Export Cable Corridor (offshore ECC or onshore ECC)
EIA	Environmental Impact Assessment
ES	Environmental Statement
GIG	Green Investment Group
GULF	Gulf Energy Development
GW	Gigawatt
HND	Holistic Network Design
HRA	Habitats Regulations Assessment
IEMA	Institute of Environmental Management and Assessment
MHWS	Mean High Water Springs
MLWS	Mean Low-Water Springs
NGESO	National Grid Electricity System Operator
ODOW	Outer Dowsing Offshore Wind (The Project)
OnSS	Onshore Substation
OTNR	Offshore Transmission Network Review
PEIR	Preliminary Environmental Information Report
RIAA	Report to Inform Appropriate Assessment
SMRU	Sea Mammal Research Unit
TCE	The Crown Estate

Terminology

Term	Definition
Array area	The area offshore within which the generating station (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling will be positioned.
Baseline	The status of the environment at the time of assessment without the development in place.
Cumulative effects	The combined effect of the Project acting cumulatively with the effects of other projects, on the same single receptor/resource.
deemed Marine Licence (dML)	A marine licence set out in a Schedule to the Development Consent Order and deemed to have been granted under Part 4 (marine licensing) of the Marine and Coastal Access Act 2009.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).

Term	Definition
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor, in accordance with defined significance criteria.
EIA Directive	European Union Directive 2011/92/EU (as amended by Directive 2014/52/EU).
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the Environmental Impact Assessment (EIA) Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the EIA.
Evidence Plan	A voluntary process of stakeholder consultation with appropriate Expert Topic Groups (ETGs) that discusses and, where possible, agrees the detailed approach to the Environmental Impact Assessment (EIA) and information to support Habitats Regulations Assessment (HRA) for those relevant topics included in the process, undertaken during the pre-application period.
Intertidal	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS)
Landfall	The location at the land-sea interface where the offshore cables and fibre optic cables will come ashore.
National Grid Onshore Substation (NGSS)	The National Grid substation and associated enabling works to be developed by the National Grid Electricity Transmission (NGET) into which the Project's 400kV Cables would connect.
Offshore Export Cable Corridor (ECC)	The Offshore Export Cable Corridor (Offshore ECC) is the area within the Order Limits within which the export cables running from the array to landfall will be situated.
Offshore Reactive Compensation Platform (ORCP)	A structure attached to the seabed by means of a foundation, with one or more decks and a helicopter platform (including bird deterrents) housing electrical reactors and switchgear for the purpose of the efficient transfer of power in the course of HVAC transmission by providing reactive compensation.
Offshore Substation (OSS)	A structure attached to the seabed by means of a foundation, with one or more decks and a helicopter platform (including bird deterrents), containing— (a) electrical equipment required to switch, transform, convert electricity generated at the wind turbine generators to a higher voltage and provide reactive power compensation; and (b) housing accommodation, storage, workshop auxiliary equipment, radar and facilities for operating, maintaining and controlling the substation or wind turbine generators.
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cables running from the landfall to the onshore substation will be situated.
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection.

Term	Definition
Onshore substation (OnSS)	The Project's onshore HVAC substation, containing electrical equipment, control buildings, lightning protection masts, communications masts, access, fencing and other associated equipment, structures or buildings; to enable connection to the National Grid.
Outer Dowsing Offshore Wind (ODOW)	The Project.
Order Limits	The area subject to the application for development consent. The limits shown on the works plans within which the Project may be carried out.
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Preliminary Environmental Information Report (PEIR)	The PEIR was written in the style of a draft Environmental Statement (ES) and provided information to support and inform the statutory consultation process during the pre-application phase.
Statutory consultee	Organisations that are required to be consulted by the Applicant, the Local Planning Authorities and/or The Planning Inspectorate during the pre-application and/or examination phases, and who also have a statutory responsibility in some form that may be relevant to the Project and the DCO application. This includes those bodies and interests prescribed under Section 42 of the Planning Act 2008.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation, TotalEnergies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The project is being developed by Corio Generation (a wholly owned Green Investment Group portfolio company), TotalEnergies and GULF.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.

Reference Documentation

Document Number	Title
1.2	Guide to the Application
5.1	Consultation Report
5.1.2a	Scoping Opinion
5.1.2b	Scoping Report
6.1.2	Need, Policy & Legislative Context
6.1.3	Project Description
6.1.4	Site Selection & Assessment of Alternatives

1 Introduction

1.1 Project Background

1. In September 2019, The Crown Estate (TCE), as manager of the seabed, initiated a new leasing round process known as Leasing Round 4 in order to make new areas of the seabed available for offshore wind development. It aimed to identify at least 7GW of new offshore wind projects in English and Welsh waters, with the potential to deliver electricity for more than six million homes. The Offshore Wind Leasing Round 4 tender process concluded in February 2021, selecting six proposed new offshore wind projects in the waters around England and Wales, including Outer Dowsing Offshore Wind (ODOW, hereafter known as the Project).
2. This document forms part of the Environmental Statement (ES) for the proposed Project.

1.2 ES Purpose

3. The purpose of the ES is to provide the decision-maker, stakeholders and all interested parties with the environmental information required to develop an informed view of any likely significant effects resulting from the development, as required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations).
4. An Environmental Impact Assessment (EIA) Scoping Report (document reference 5.1.2b) for the Project was submitted to the Planning Inspectorate on 1st August 2022 (Outer Dowsing Offshore Wind, 2022), included as an appendix to the Consultation Report (document reference 5.1). The Project received a Scoping Opinion ((document reference 5.1.2a)) on 9th September 2022 (The Planning Inspectorate, 2022) and this ES is based on that Opinion, as required by Regulation 14 (3) (a) of the EIA Regulations.
5. This ES also builds on and updates information provided in the Preliminary Environmental Information Report (PEIR) (Outer Dowsing Offshore Wind, 2023) which was published for formal stakeholder consultation on the 7th June 2023 under Section 42 of the Planning Act 2008. The PEIR was publicised in accordance with section 48 of the Planning Act 2008, Regulation 4 of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 and Regulation 13 of the EIA Regulations. It was consulted on with local communities as set out in the Statement of Community Consultation, in accordance with Section 47 of the Planning Act 2008. Due to project developments from PEIR to ES, the Project held a formal stakeholder consultations under Section 42 of the Planning Act 2008 the Autumn Consultation and Targeted Winter Consultation detailed within document 5.1 Consultation Report. Feedback from all rounds of consultation has been considered and where relevant, has informed the final design of the Project and the impact assessment presented in this ES.

6. An Evidence Plan Process has been run with a number of key stakeholders to co-ordinate responses and identify issues and solutions in advance of the application in relation to a number of key offshore and onshore environmental issues and receptors (see Volume 1, Chapter 6: Technical Consultation (document reference 6.1.6) for further details). A summary of all the consultation responses received during the pre-application period is presented in the Consultation Report (document reference 5.1), which sets out how the Applicant has considered the consultation responses in preparing the final materials, which forms part of the Development Consent Order (DCO) application.
7. The ES sets out the findings of the EIA undertaken to support this DCO application for the Project. This ES describes the potential environmental impacts associated with the Project including the associated onshore and offshore infrastructure. It considers impacts associated with the construction, operation, maintenance and decommissioning phases.
8. The ES shall:
 - Satisfy the statutory requirements set out in the EIA Regulations;
 - Present the existing environmental baseline information, established from desktop studies, and those offshore and onshore surveys undertaken;
 - Describe the methodology used within the EIA process;
 - Present the likely key environmental features and receptors which have the potential to be affected by the Project during any phase of the Project (construction, operation and decommissioning), directly, indirectly and through secondary and/or cumulative effect, as well as the potential for transboundary effects;
 - Describe the likely significant environmental effects arising from the Project;
 - Indicate any limitations encountered during the compilation of the environmental information, including the acknowledgement of any data gaps or deficiencies and confidence in the information gathered to date;
 - Present potential mitigation measures that could prevent, minimise, reduce or offset potential negative environmental impacts identified during the EIA process undertaken; and
 - Provide an overview of the main alternatives considered by the Project and an indication of the reasons for the selection of the chosen Project.
9. This ES is submitted as part of an application for a Development Consent Order (DCO) as required under Section 37 of the Planning Act 2008. Further detail on the legislative context for the Project is provided in Volume 1, Chapter 2: Need, Policy and Legislative Context (document reference 6.1.2).

2 The Applicant

10. GT R4 Limited (the Applicant) applied, on behalf of the partners TotalEnergies, Corio Generation and Gulf Energy Development, for an Agreement for Lease (AfL) for the Project. The Applicant signed an AfL with TCE on 17th January 2023. The Applicant is leading on the development work for the Project.
11. TotalEnergies, a global multi-energy company, has expertise in offshore operations and maintenance thanks to its historical activities. TotalEnergies is already developing and building offshore wind projects with a cumulative capacity of approximately six gigawatts (GW), including three floating offshore wind projects in Europe and Asia. As part of its ambition to get to net zero by 2050, TotalEnergies is building a portfolio of activities in renewables and electricity that should account for up to 40% of its sales by 2050. At the end of 2020, TotalEnergies' gross power generation capacity worldwide was around 12GW, including 7GW of renewable energy. TotalEnergies will continue to expand this business to reach 35GW of gross production capacity from renewable sources by 2025, and then 100GW by 2030 with the objective of being among the world's top 5 in renewable energies.
12. Corio Generation is a specialist offshore wind business, dedicated to harnessing the world's greatest energy supply. With a unique blend of sector-leading expertise and deep access to long-term capital, Corio applies a long-term partnership approach to the creation and management of projects, taking them from origination, through development and construction, and into operations. Corio's 15GW pipeline is one of the largest in the world, spanning established and emerging markets, as well as floating and traditional fixed-bottom technologies. These next generation offshore wind projects will help form the backbone of the net-zero global energy system while meeting the energy needs of communities and corporate off takers sustainably, reliably, safely and responsibly. Corio Generation is a Green Investment Group (GIG) portfolio company, operating on a standalone basis. GIG is a specialist green investor within Macquarie Asset Management, part of Macquarie Group.
13. Gulf Energy Development (GULF) is a holding company headquartered in Thailand that invests in a global portfolio of energy, infrastructure, and digital and telecommunications businesses. GULF brings close to three decades of experience in energy project management and operation, with a mission to invest in businesses related to renewable energy and climate management, in accordance with the global target to achieve net zero emissions by 2050. As one of Thailand's largest private power producers with over 20 GW of gas-fired and renewable capacity, GULF is committed to supporting the energy transition with onshore and offshore wind projects, solar projects, and other contributions to energy security across various regions to create sustainable shared value in all spheres where it operates.

3 The EIA Team

14. GoBe Consultants Ltd (GoBe), an APEM Group Company, has supported the Applicant as Development Services Provider to provide environmental and consenting services for the development phase of the Project. GoBe have been supported through the EIA process by a number of additional sub-consultants who are responsible for particular specialisms (see Table 1.1).
15. GoBe is an environmental consultancy with considerable expertise in offshore renewable energy. GoBe's EIA activities and ES documents are accredited at a Company level by the Institute of Environmental Management and Assessment (IEMA) under the EIA Quality Mark Scheme. This demonstrates GoBe's commitment to ensuring EIA is undertaken to the highest quality and in accordance with best practice, as well as demonstrating compliance with Regulation 14(4) of the EIA Regulations, requiring that the ES has been prepared by competent experts. GoBe is also ISO9001 accredited for its Quality Management System.

4 Order Limits

4.1 Overview

16. The Project's Order Limits are presented as an overview in Figure 6.2.1.1, and separately in Figure 6.2.1.2 (Offshore Order Limits) and Figure 6.2.1.3 (Onshore Order Limits).
17. The offshore Order Limits include the Array Area, the offshore export cable route corridor (offshore ECC), including the search area for the Offshore Reactive Compensation Platform (ORCP), Landfall on the Lincolnshire coast (to mean high water springs (MHWS)), and the search areas for the delivery of up to two Artificial Nesting Structures (ANS) and the recreation of a biogenic reef (if these compensation measures are deemed to be required by the Secretary of State).
18. As part of the Offshore Leasing Round 4, the Applicant undertook a detailed site selection process, using publicly available datasets, to identify a range of array area options within the specified leasing zones. Through the bidding process, the Applicant was awarded Preferred Bidder status in early 2021 and entered the seabed AfL for the 500km² lease area at the beginning of 2023. As a condition of the AfL, the Applicant must increase the power density of the windfarm from the leased density of 3MW/km² to 5MW/km² prior to stepping into the lease, which requires a reduction in the array area. The Applicant has chosen to commence this refinement process throughout the pre-consent process, with refinements to the array area to avoid, reduce and mitigate impacts to other receptors. Full details of the initial site selection work, current refinement process and receptors considered are presented within Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (document reference 6.1.4).

4.2 Offshore

19. The Offshore ECC was selected through a comprehensive site selection process which considered various environmental and engineering/technical constraints (described in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (document reference 6.1.4)). The starting point for the Offshore ECC routing was identification of the potential grid connection locations, which then informed potential landfall search areas. Following identification of viable landfall locations, offshore routing was undertaken between the possible landfalls and the array area. Upon confirmation from National Grid of the initial conclusions of the Offshore Transmission Network Review¹ (OTNR) Holistic Network Design (HND) for the Project's potential connection locations, the proposed Offshore ECC was identified. Minor refinements to the Offshore ECC have taken place post-PEIR, primarily around the nearshore, as presented within Volume 1, Chapter 3: Project Description (document reference 6.1.3).
20. Further details on defining the offshore draft Order Limits are presented in Chapter 4 (document reference 6.1.4).

¹ <https://www.gov.uk/government/groups/offshore-transmission-network-review>

4.3 Onshore

21. The onshore draft Order Limits include the export cable Landfall (to mean low water springs (MLWS)), the Onshore ECC, the onshore substation (OnSS) location, and the 400kV cables between the OnSS and the future National Grid Substation.
22. The Landfall will be located at Wolla Bank, on the Lincolnshire coastline, south of Anderby Creek.
23. The Onshore ECC has been further refined from PEIR and will run underground from the landfall via the route which passes north of the A52 (as referred to in the PEIR), to the Project's OnSS location.
24. The confirmed grid connection point for the Project was determined through the OTNR's HND. Initiated by the Minister for Energy, Clean Growth and Climate Change, the OTNR process was managed by DESNZ (previously BEIS) with support from Ofgem, the National Grid Electricity System Operator (NGESO) and TCE. Further information on the OTNR process is provided in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (document reference 6.1.4).
25. Following confirmation from National Grid that the connection point for the Project would be at Weston Marsh, and finalisation of the site selection process, the Project OnSS will be located at Surfleet Marsh, north of Spalding (formally referred to as Weston Marsh North in the PEIR).
26. The previous holding grid connection offer was amended by National Grid and accepted by the Project in November 2023, and that option has been taken forward by the Applicant in the final DCO application.
27. Further details on defining the onshore draft Order Limits are detailed in Chapter 4 (document reference 6.1.4).

5 ES Structure

28. The Project ES is contained within 1 part and 3 volumes:

- Part 6, Volume 1: ES Chapters, including non-technical summary, introductory chapters, offshore chapters, onshore chapters and wider topic chapters;
- Part 6, Volume 2: Figures;
- Part 6, Volume 3: Appendices, including introductory appendices, offshore appendices, onshore appendices and wider topic appendices.

29. Additional documentation relevant to the ES which has been produced as part of the DCO application is contained within:

- Part 5: Consultation Report
- Part 7: Report to Inform Appropriate Assessment (RIAA);
- Part 8: Outline Documents;
- Part 9: Project Statements.

30. A full list of documents included within the DCO Application is presented in the Guide to the Application (document reference 1.2), with its corresponding Application reference number.

31. The structure of this ES is summarised further in Table 5.1, together with the contributing technical specialists. The primary documentation presented herein is supported by various technical appendices as required and referenced throughout the topic chapters.

Table 5.1 Environmental Statement Chapters

Volume Number	Chapter Number	Document Number	Chapter Title	Prepared By (Lead)
n/a	1	6.1	Non-Technical Summary	GoBe Consultants Ltd (with SLR Consulting Ltd)
1	1	6.1.1	Introduction	GoBe Consultants Ltd (with SLR Consulting Ltd)
1	2	6.1.2	Need, Policy and Legislative Context	GoBe Consultants Ltd
1	3	6.1.3	Project Description	GoBe Consultants Ltd
1	4	6.1.4	Site Selection and Consideration of Alternatives	GoBe Consultants Ltd (with SLR Consulting Ltd)
1	5	6.1.5	Environmental Impact Assessment Methodology	GoBe Consultants Ltd (with SLR Consulting Ltd)
1	6	6.1.6	Technical Consultation	Outer Dowsing
1	7	6.1.7	Marine Physical Processes	GoBe Consultants Ltd
1	8	6.1.8	Marine Water and Sediment Quality	GoBe Consultants Ltd
1	9	6.1.9	Benthic and Intertidal Ecology	GoBe Consultants Ltd

Volume Number	Chapter Number	Document Number	Chapter Title	Prepared By (Lead)
1	10	6.1.10	Fish and Shellfish Ecology	GoBe Consultants Ltd
1	11	6.1.11	Marine Mammals	GoBe Consultants Ltd (with SMRU Consulting Ltd)
1	12	6.1.12	Offshore and Intertidal Ornithology	GoBe Consultants Ltd
1	13	6.1.13	Marine and Intertidal Archaeology	Maritime Archaeology Ltd
1	14	6.1.14	Commercial Fisheries	Poseidon Aquatic Resource Management Ltd
1	15	6.1.15	Shipping and Navigation	Anatec Ltd
1	16	6.1.16	Aviation, Radar, Military and Communication	Cyrrus Ltd
1	17	6.1.17	Seascape, Landscape and Visual	Optimised Environments Ltd
1	18	6.1.18	Marine Infrastructure and Other Users	GoBe Consultants Ltd
1	19	6.1.19	Onshore Air Quality	SLR Consulting Ltd
1	20	6.1.20	Onshore Archaeology and Cultural Heritage	SLR Consulting Ltd
1	21	6.1.21	Onshore Ecology	SLR Consulting Ltd
1	22	6.1.22	Onshore Ornithology	SLR Consulting Ltd
1	23	6.1.23	Geology and Ground Conditions	SLR Consulting Ltd
1	24	6.1.24	Hydrology, Hydrogeology and Flood Risk	SLR Consulting Ltd
1	25	6.1.25	Land Use	SLR Consulting Ltd
1	26	6.1.26	Noise and Vibration	SLR Consulting Ltd
1	27	6.1.27	Traffic and Transport	SLR Consulting Ltd
1	28	6.1.28	Landscape and Visual Assessment	Optimised Environments Ltd
1	29	6.1.29	Socio-Economic Characteristics	BiGGAR Economics Ltd (with GoBe Consultants Ltd)
1	30	6.1.30	Human Health	SLR Consulting Ltd
1	31	6.1.31	Climate Change	SLR Consulting Ltd

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