

# Outer Dowsing Offshore Wind

## Outline Documents

### 8.1.5 Outline Surface Water Drainage Strategy

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## Acronyms & Definitions

### Abbreviations / Acronyms

| Abbreviation / Acronym | Description   |
|------------------------|---|
| CoCP                   | Code of Construction Practice                                     |
| CIRIA                  | Construction Industry Research and Information Association        |
| DCO                    | Development Consent Order   |
| EA                     | Environment Agency  |
| ECC                    | Export Cable Corridor   |
| EN-1                   | Overarching National Policy Statement for Energy                  |
| EN-3                   | National Policy Statement for Renewable Energy Infrastructure     |
| EN-5                   | National Policy Statement for Electricity Networks Infrastructure |
| ES                     | Environmental Statement   |
| HDD                    | Horizontal Directional Drilling                                   |
| IDB                    | Internal Drainage Board   |
| LCC                    | Lincolnshire County Council                                       |
| MHWS                   | Mean High Water Springs   |
| MLWS                   | Mean Low Water Springs  |
| NPPF                   | National Planning Policy Framework                                |
| NPS                    | National Policy Statement   |
| OnSS                   | Onshore Substation  |
| PPEIRP                 | Pollution Prevention and Emergency Incident Response Plan         |
| SuDS                   | Sustainable Drainage System                                       |
| SWDS                   | Surface Water Drainage Strategy                                   |
| TJB                    | Transition Joint Bay  |

### Terminology

| Term                 | Definition  |
|----------------------|---|
| 400kV cables         | High-voltage cables linking the OnSS to the NGSS.   |
| 400kV cable corridor | The 400kV cable corridor is the area within which the 400kV cables connecting the onshore substation to the NGSS will be situated.  |
| The Applicant        | GT R4 Ltd. The Applicant making the application for a DCO.<br>The Applicant is GT R4 Limited (a joint venture between Corio Generation, Total Energies 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. |
| Baseline             | The status of the environment at the time of assessment without the development in place.   |
| Cable Circuit        | A number of electrical conductors necessary to transmit electricity between two points bundled as one cable or taking the form of separate cables and may include one or more auxiliary cables (normally fibre optic cables).   |

| Term                                    | Definition  |
|---|---|
| Cable ducts                             | A duct is a length of underground piping which is used to house the Cable Circuits.   |
| Connection Area                         | An indicative search area for the NGSS.   |
| Development Consent Order (DCO)         | An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).  |
| Effect                                  | Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.  |
| Export cables                           | High voltage cables which transmit power from the Offshore Substations (OSS) to the Onshore Substation (OnSS) via an Offshore Reactive Compensation Platform (ORCP) if required, which may include one or more auxiliary cables (normally fibre optic cables).  |
| Grid connection cable                   | Cable which connects the project Onshore Substation (OnSS) with the National Grid Substation.   |
| Haul Road                               | The track within the onshore ECC which the construction traffic would use to facilitate construction.   |
| Impact                                  | An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.  |
| Indicative Working Width                | The indicative working width within the Onshore Export Cable Corridor (ECC), required for the construction of the onshore cable route.  |
| Intertidal                              | The area between Mean High-Water Springs (MHWS) and Mean Low Water Springs (MLWS)   |
| Joint bays                              | An excavation formed with a buried concrete slab at sufficient depth to enable the jointing of high voltage power cables.   |
| Landfall                                | The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.  |
| Link boxes                              | Underground metal chamber placed within a plastic and/or concrete pit where the metal sheaths between adjacent export cable sections are connected and earthed.   |
| Maximum Design Scenario                 | The project design parameters, or a combination of project design parameters that are likely to result in the greatest potential for change in relation to each impact assessed   |
| Mitigation                              | Mitigation measures are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects. |
| 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.  |
| National Policy Statement (NPS)         | A document setting out national policy against which proposals for Nationally Significant Infrastructure Projects (NSIPs) will be assessed and decided upon   |

| Term                                 | Definition   |
|--------------------------------------|--|
| 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.  |
| 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.   |
| 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   |
| 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.  |
| Outer Dowsing Offshore Wind (ODOW)   | The Project.   |
| Project design envelope              | A description of the range of possible elements that make up the Project's design options under consideration, as set out in detail in the project description. This envelope is used to define the Project for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the "Rochdale Envelope" approach.  |
| Receptor                             | A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.   |
| The Planning Inspectorate            | The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).  |
| The Project                          | Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.   |
| Transition Joint Bay (TJBs)          | The offshore and onshore cable circuits are jointed on the landward side of the sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.   |
| Trenchless technique                 | Trenchless technology is an underground construction method of installing, repairing, and renewing underground pipes, ducts and cables using techniques which minimise or eliminate the need for excavation. Trenchless technologies involve methods of new pipe installation with minimum surface and environmental disruptions. These techniques may include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench. |

## Reference Documentation

| Document Number | Title   |
|-----------------|---|
| 8.1             | Outline Code of Construction Practice                             |
| 8.1.3           | Outline Soil Management Plan                                      |
| 8.1.4           | Outline Pollution Prevention and Emergency Incident Response Plan |
| 8.4             | Outline Project Environmental Management Plan                     |
| 8.12            | Outline Operational Drainage Management Plan (ODMP)               |

# 1 Introduction

## 1.1 Purpose of this Document

1. This Outline Surface Water Drainage Strategy (SWDS) (document reference 8.1.5) is provided as part of the Outline Code of Construction Practice (CoCP) (document reference 8.1) submitted with the Development Consent Order (DCO) application.
2. This is an outline document that, by reference to the assessments reported in the Environmental Statement (ES), sets out the key elements that will be secured in the final SWDS which is required to be submitted to and approved by the relevant planning authority following consultation, as appropriate, with Lincolnshire County Council (LCC), the Environment Agency and/or relevant statutory nature conservation body as per the relevant requirements of the draft Development Consent Order (DCO).
3. This Outline SWDS sets out the principles for surface water management which will be incorporated into the final SWDS to be implemented by the Project and its contractors during construction and it should be read in conjunction with the Outline CoCP (document reference 8.1) and its supporting appendices.

## 1.2 Scope of this Document

4. This Outline SWDS relates to the construction of the onshore elements of the Project only (i.e., landward of Mean Low Water Springs (MLWS)). A separate Outline Operational Drainage Management Plan (ODMP) (document reference 8.12) has been prepared for the operational phase of the onshore substation (OnSS).
5. In reference to the landfall, this will involve both onshore and offshore works. The works within the intertidal area (i.e. between MLWS and Mean High Water Springs (MHWS)) will adhere to both the SWDS and the equivalent offshore documents, particularly the Outline Project Environmental Management Plan (document reference 8.4).

## 1.3 Objective

6. The main objectives with regard to managing potential surface water drainage are to manage flood risk during construction, and to comply with relevant legislation and good practice in terms of managing surface water abstractions and discharges.
7. Protecting surface water and groundwater to prevent contaminants from entering the surrounding environment is discussed further in the Outline Pollution Prevention and Emergency Incident Response Plan (PPEIRP) (document reference 8.1.4) provided as part of the Outline CoCP (document reference 8.1).

## 1.4 Relevant Guidance

8. Works will be undertaken in accordance with good practice advice. This will include, but is not limited to:



- Environmental Good Practice on Site (C741), (Construction Industry Research and Information Association (CIRIA) 2015a);
- The Sustainable Drainage System (SuDS) Manual (C753), (CIRIA 2015b); and
- Site Handbook for the Construction of SuDS (C698), (CIRIA 2007).

## 2 Surface Water Drainage – Principles

9. Prior to commencement of the construction works, a number of surveys and studies will be undertaken to inform the final design of the Project including further ecological surveys, geotechnical investigations, and drainage assessments.
10. Surface water drainage requirements will be set out within the final Surface Water Drainage Strategy and will be designed to meet the requirements of the National Planning Policy Framework (NPPF), Overarching National Policy Statement for Energy (NPS EN-1), National Policy Statement for Renewable Energy Infrastructure (NPS EN-3), and National Policy Statement for Electricity Networks Infrastructure (NPS EN-5). Runoff will be limited through the use of SuDS and infiltration techniques, where feasible, which can be accommodated within the onshore Export Cable Corridor (ECC) and 400kV cable corridor construction areas.
11. General surface water drainage principles that will be adhered to during construction are as follows:
  - Cable trenching and construction site access road widening across surface watercourses will require measures to ensure that the water quality and flow rates are unaffected either directly or indirectly;
  - The onshore ECC and 400kV cable corridor and the construction site access roads will be designed to minimise land-take and to avoid, where possible, impacts on existing drainage networks and features;
  - Preparation of a Flood Management and Response Plan setting out actions that will be taken in the event of flooding or a flood warning during construction works. This would include a procedure for securing or moving sensitive equipment and/or relocating materials stored in bulk;
  - The onshore temporary construction compounds, construction accesses, and haul roads would comprise permeable gravel overlying a permeable geotextile membrane of an appropriate standard;
  - Trenchless crossing techniques will be adopted for all Environment Agency main rivers and Internal Drainage Board (IDB) owned or maintained drains. For riparian watercourses, the crossing methodology will be agreed with the relevant landowner and IDB;
  - Cable entry and exit points within the transition joint bay (TJB) at landfall and joint bays will be sealed with an appropriate water proofing material to mitigate flood risk;
  - The Applicant will commission a pre-construction land drainage survey and carry out pre-construction land drainage works to ensure existing land drainage flow is maintained;
  - Preconstruction drainage works will be installed, where necessary, to intercept existing land drains within the construction corridor. Any field drainage or land drainage intercepted during the cable installation, that has not been replaced by the pre-construction scheme will either be reinstated following the installation of the cable, diverted to a secondary channel, or replaced by the post-construction drainage scheme through agreement with the relevant stakeholders;

- Surface water flowing into work areas and excavated trenches during the construction period will be pumped via settling tanks or ponds within the Order Limits to remove sediment and potential contaminants, before being discharged into local ditches or drains via temporary interceptor drains. Where gradients on site are significant, cable trenches will include a hydraulic brake (bentonite or natural clay seals) to reduce flow rates along trenches and reduce local erosion; and
- Any stockpiles along the onshore ECC, 400kV corridor, or at the OnSS location will comply with measures set out within the final Soil Management Plan, an outline of which has been submitted as document reference 8.1.3, which forms part of the Outline CoCP (document reference 8.1); and would be kept to a minimum possible size with gaps to allow surface water runoff to pass through.

12. The final Surface Water Drainage Strategy will be developed according to the principles of the SuDS discharge hierarchy. Generally, the aim will be to discharge surface water runoff as high up the following hierarchy of drainage options as reasonably practicable:

- Into the ground (infiltration);
- To a surface waterbody;
- To a surface water sewer, highway drain or another drainage system; or
- To a combined sewer.

The final Surface Water Drainage Strategy will maintain the existing drainage to and from surrounding land and reduce the risk of any increase in surface water flood risk to off-site areas. Development of the plan will include assessment of the current and proposed runoff rates, volume of storage required, and the proposed approach for discharge of water from each work location.

### **3 Surface Water Drainage – Monitoring and Controls**

#### **3.1 Monitoring**

13. On-site meetings/inspections will be carried out as necessary to confirm the appropriate use of mitigation measures identified within the final SWDS. These meetings/inspections will highlight any further issues/measures which may be relevant either prior to commencement or during the works.
14. Monitoring will be carried out to verify compliance with the final SWDS and to ensure that all mitigation measures put in place are maintained and continue to be effective.

#### **3.2 Records**

15. Records will be kept of all initial, final, and routine monitoring inspections of all mechanical plant and working construction areas, as well as ecological and environmental issues. These records will be stored in an agreed location on site and be available for internal and external monitoring and review as required.
16. Record sheets will detail the date, location of inspection, frequency, findings, appropriate person/s notified and identified actions as necessary. Records of any incidents detailing the location, date/ time, volume, investigation/report/lessons learnt will also be kept.

#### **3.3 Training**

17. All employees, contractors, subcontractors, suppliers, and visitors to the site will be notified via a site induction of the requirements on site for surface water management.
18. Construction workers will be trained in the implementation of the Pollution Prevention and Emergency Incident Response Plan and the Flood Management and Response Plan which forms part of the Outline CoCP (document reference 8.1).
19. Through toolbox talks, construction workers will be educated on those aspects of environmental management as appropriate to the task assigned to them.
20. The Principal Contractor will be responsible for overseeing and enforcing the final SWDS such that potential adverse impacts to the environment are avoided or mitigated.