The Great Grid Upgrade

Sea Link

Preliminary Environmental Information Report

Volume: 2

Part 1 Introduction

Appendix 1.4.A Outline Code of Construction Practice

Version A

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nationalgrid

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1.4.A Outline Code of Construction Practice

1.4.A.1 Introduction

Overview

1.4.A.1.1 The Sea Link Project (hereafter referred to as the 'Proposed Project') is a proposal by National Grid Electricity Transmission plc (hereafter referred to as National Grid) to reinforce the transmission network in the South East of England and East Anglia. The Project is required to accommodate additional power flows generated from renewable and low carbon energy generation, as well as additional new interconnection with mainland Europe.

1.4.A.1.2 This reinforcement would be achieved by reinforcing the network with a High Voltage Direct Current (HVDC) Link between the proposed Friston substation in the Sizewell area of Suffolk and the existing Richborough to Canterbury 400kV overhead line close to Richborough in Kent.

1.4.A.1.3 The Proposed Project would comprise of the following elements:

- Proposed Friston 400 kV substation and associated overhead line modifications or a connection into and works within the proposed Friston substation;
- Underground High Voltage Alternating Current (HVAC) connection between the proposed Friston substation and the proposed Saxmundham Converter Station Site (approximately 1.6 km);
- Proposed Saxmundham Converter Station;
- HVDC underground cable between the proposed Saxmundham Converter Station to the Suffolk landfall;
- Marine HVDC cable between the Suffolk landfall and the Kent landfall;
- HVDC underground cable between the Kent landfall and Minster Converter Station;
- Minster Converter Station and Minster 400 kV substation located within a singular compound; and
- HVAC connection by overhead line from Minster 400 kV substation to the existing Richborough to Canterbury 400 kV overhead line.

Purpose of the Code of Construction Practice

1.4.A.1.4 This is the Outline Code of Construction Practice (CoCP) for the Proposed Project, which has been produced to support the Preliminary Environmental Information Report (PEIR). It has been produced to set out control and management measures that will be undertaken during construction of the Proposed Project if granted consent. It is designed to support the assessment of preliminary effects in the PEIR and residual significance in the future Environmental Impact Assessment (EIA).

1.4.A.1.5 It will be updated as the Proposed Project evolves to include additional measures identified through the engineering design, the EIA process and from engagement with stakeholders. A final CoCP will be submitted as an appendix to the Environmental Statement (ES) as part of the application for development consent. Compliance with the CoCP will be secured by way of a requirement in the Development Consent Order (DCO). The CoCP will require further documents to be prepared at different stages of the Proposed Project, including:

- Construction Environmental Management Plan;
- Landscape and Ecological Management Plan;
- Construction Traffic Management Plan;
- Dust Management Plan;
- Construction Logistics Plan;
- Soil Management Plan;
- Materials Management Plan;
- Site Waste Management Plan;
- Drainage Management Plan;
- Noise and Vibration Management Plan; and
- Public Rights of Way Strategy.

1.4.A.1.6 It is assumed that measures in the CoCP will be in place before undertaking the assessment. This will enable the assessment to be proportionate and focused on the likely significant effects that would be material to the decision. This is in accordance with The Institute of Environmental Management and Assessment's guidance document, Delivering Quality Development (Ref. 1.4.A.1).

1.4.A.1.7 The Proposed Project will be delivered in compliance with all relevant legislation, consents and permits. Any statutory requirements listed in this document and industry good practice guidance which has informed each part of the document are not to be seen as exhaustive.

1.4.A.1.8 National Grid will put in place robust procedures to audit and inspect the Proposed Project, including its supply chain of contractors, to make sure the control measures set out in the CoCP are adopted when constructing the Proposed Project. The CoCP will apply to all areas of the Proposed Project delivered pursuant to the DCO, during construction.

Compliance with legislation, standards and guidance

1.4.A.1.9 There is a broad range of legislation covering the different aspects of environmental protection. All relevant legislative requirements will be adhered to during construction, for example those relating to invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (Ref. 1.4.A.2).

1.4.A.1.10 These statutory requirements are supported by additional statutory guidance, 'standards' (such as British Standards (BS) or International Standards (ISO)) and other 'best practice' guidance, including industry codes of practice.

1.4.A.1.11 Where relevant these will be adhered to during the construction of the Proposed Project and will be kept under review and updated as required as a result of new or amended legislation, standards and guidance by National Grid and their contractors.

1.4.A.2 General Principles

Objectives

1.4.A.2.1 The CoCP is part of an Environmental Management System that establishes a framework of controls that manage and minimise construction impacts associated with the Sea Link Project, including the safety and security of the public and construction staff and to mitigate the impact of general site operations.

1.4.A.2.2 Other controls within the framework for the Proposed Project, to be defined throughout the application and examination process, and will include project requirements that will set out clear and enforceable controls for the construction of the Sea Link Project as well as monitoring and management plans.

1.4.A.2.3 The measures and controls in the CoCP must be implemented in a way which aims to ensure the project minimises its adverse environmental impacts.

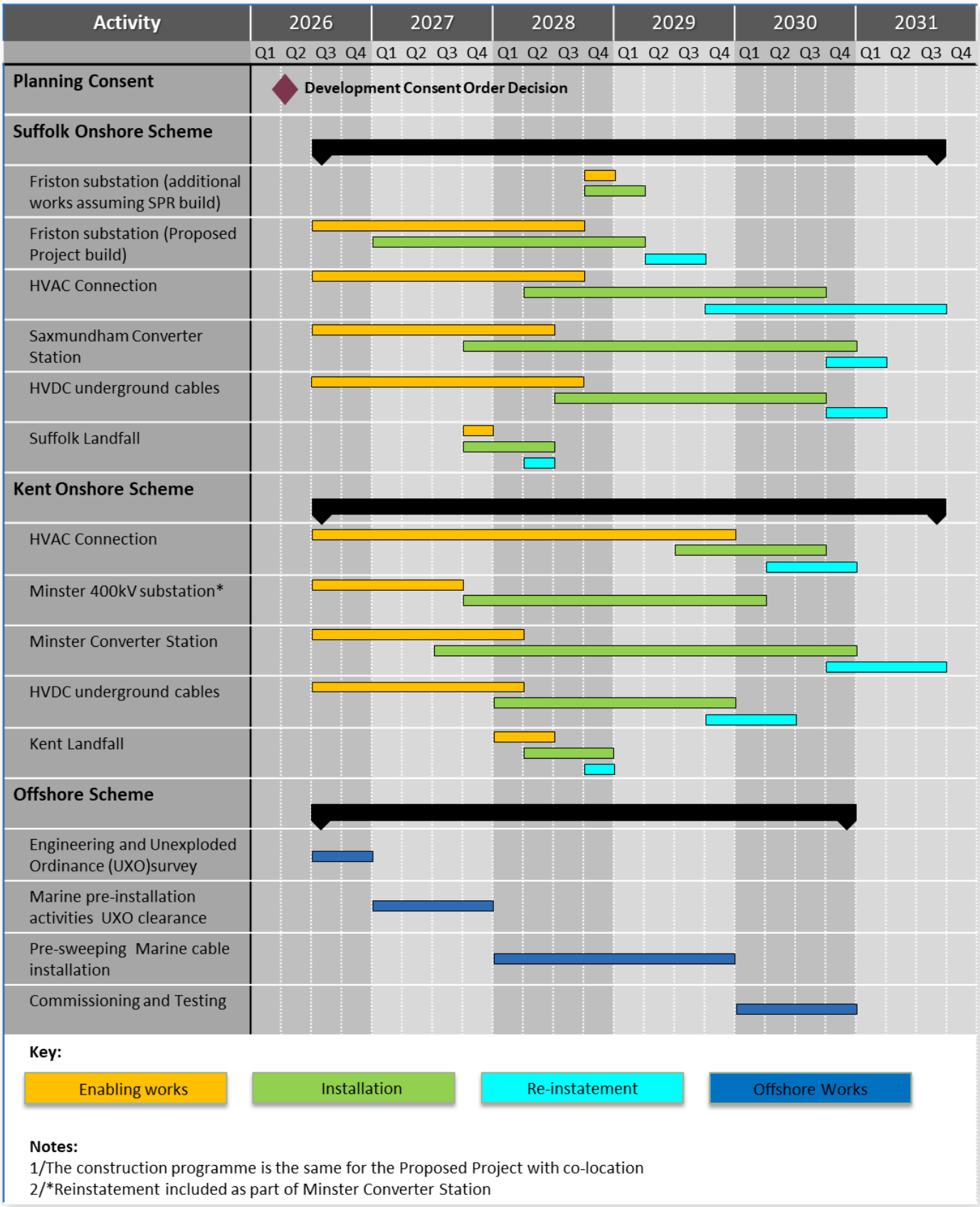
Construction Programme

1.4.A.2.4 Subject to gaining development consent, construction works would be expected to start in 2026 and be completed by 2031. Certain advance works (such as archaeological trial trenching or protected species mitigation) may take place in advance of the main construction period.

1.4.A.2.5 The construction schedule will be developed as the Proposed Project progresses and will take account of seasonal constraints such as protected species breeding or hibernation seasons and reducing impacts associated with flood zones.

1.4.A.2.6 An indicative construction programme for the Proposed Project is presented in Table 1.4.A.1.

Table 1.4.A.1: Indicative Construction Programme



Working Hours

1.4.A.2.7 The proposed construction working hours are:

- Monday – Friday: 07:00am–19:00pm.
- Saturday: 07:00am–17:00pm.
- Sundays/Bank Holidays: non-working.

1.4.A.2.8 Exceptions to the above include but not limited to:

- Continuous periods of operation such as concrete pouring, dewatering, cable pulling, cable jointing and drilling during the operation of a trenchless technique (e.g. Horizontal Directional Drill (HDD)), installation and removal of conductors, pilot wires and associated protective netting across highways or public footpaths.
- Internal fitting out works within buildings associated with the onshore substations and converter stations.
- Delivery to the transmission works of abnormal loads that may cause congestion on the local road network (e.g. Transformer delivery vehicles, Cable Drum delivery) or any other highway works requested by the highway authority to be undertaken on a Saturday, Sunday or Bank Holiday outside of core working hours.
- Testing or commissioning
- Completion of construction activities commenced during the approved working hours which cannot safely be stopped.
- Activities necessary in the instance of an emergency where there is a risk to persons, delivery of electricity or property.
- Marine works (all works below the mean high water springs line).
- Survey works.

1.4.A.2.9 For the marine cable, construction will be a 24 hour operation where viable to minimise overall installation time, maximise the use of suitable weather windows and take advantage of vessel and equipment availability.

Training

1.4.A.2.10 The Applicant will have a system in place to ensure that Contractors are competent to perform their scope of work. Contractors shall identify the training needs of their employees and subcontractors so that they can implement the requirements of this Outline CoCP (and future management plans) into briefings and construction method statements.

1.4.A.2.11 Specific training needs will be developed for individuals to reflect the work to be carried out on the Proposed Project and the significant risks and opportunities identified.

1.4.A.2.12 All personnel will be aware of their general environmental management responsibilities, and for those whose work may cause, or have the potential to cause, a significant impact on the environment, to receive specific environmental awareness briefings. Environmental awareness will be reinforced through information, such as poster campaigns, environmental/sustainability performance indicator reports and environmental alerts.

1.4.A.2.13 All contractors are responsible for ensuring the competency of their environmental staff. In the event that environmental training is needed for staff, a contractor is responsible for ensuring this requirement is fulfilled. Any training provided to members of the project team will be logged by the project administrator and any certification documents will be produced by the relevant members of staff as evidence that they hold the required competencies.

Community Engagement and Public Information

1.4.A.2.14 A community relations agency will be appointed to provide dedicated community relations and external communications support. The community relations agency will work with the internal established communications team at National Grid.

1.4.A.2.15 A 24 hour free telephone hotline will be available, and a project website will be established and managed by the community relations team. The project helpline number and website URL details will be visible on boards placed around the perimeter of the construction site in appropriate locations where they would be visible to the public. The telephone number and project website details will also be provided to the local authorities.

1.4.A.2.16 The community relations team will ensure the details of any complaints are recorded and all complaints are appropriately managed. Complaints will be investigated, and appropriate action will be taken.

1.4.A.2.17 In addition to the project telephone helpline and project website, complaints from an external party may also be received via a number of other communication routes, for example via written correspondence or incidental contact with construction workers. Any such communications will also be passed to the community relations team.

1.4.A.2.18 Where a person from a community local to the works makes a complaint, it will be passed initially to the community relations team. The community relations team will liaise with the other members of the project team to investigate the complaint. Appropriate action will be taken by the project construction team and both the complaint, and the action taken in response, will be recorded.

Complaints Procedure

1.4.A.2.19 Any complaints associated with the construction of the proposed development, including non-conformance with the CoCP and other management plans, will be reported , recorded and investigated using a detailed complaints procedure developed by the contractor in consultation with the community relations team.

1.4.A.2.20 The detailed complaints procedure (including but not limited to complaints relating to noise, dust, vibration, pollution and construction traffic) will set out

- how and to whom complaints can be made;
- a reasonable timeframe for responding to complaints;
- the potential remedies available to address complaints; and
- who to contact in the event that the complainant is not satisfied with the outcome.

1.4.A.2.21 Primarily any minor issues or complaints relating to site incidents will be dealt with by the contractor site management team. For the escalation of these issues or for more serious issues these will be dealt with by National Grid project team.

Health and Safety

1.4.A.2.22 National Grid are committed to ensuring the health and safety of persons working on projects is maintained in accordance with the Construction (Design and Management) Regulations 2015 (CDM) (Ref. 1.4.A.3) and the principles and philosophy behind them.

1.4.A.2.23 The contractors will prepare a construction phase Safety Health and Environment (SHE) Plan prior to construction works commencing. A construction phase SHE Plan will be prepared by the contractors for each element of the Proposed Project. The Plan will ensure that adequate arrangements and welfare facilities are in place to cover:

- the safety of construction staff;
- the safety of all other people working at or visiting the construction site;
- the protection of the public in the vicinity of the construction site;
- compliance with the Construction (Design and Management)
- Regulations 2015[1] and associated Health and Safety Executive (HSE) guidance documents[2];
- emergency procedures being defined and adopted; and
- appropriate training and information being provided to personnel.

1.4.A.2.24 The contractors' Construction Phase SHE Plan will be reviewed and approved by National Grid prior to construction commencing.

1.4.A.2.25 All staff, site visitors and delivery drivers will receive the relevant level of project induction from the Principal Contractor to ensure they are aware of site hazards and health, safety and environmental management requirements. Site staff will be briefed daily by the Contractor prior to work commencing. Site-specific risk assessments will be carried out to ensure the risk strategy of the frequently changing workplace remains relevant. The contractors will be required to carry out audits and inspections.

Method Statements

1.4.A.2.26 The implementation of Method Statements for the different activities of the Proposed Development works shall be completed by the relevant contractor(s) by trained staff or other appropriate experienced personnel, in consultation with specialists. Their production shall include a review of the environmental/health and safety risks and commitments, so that appropriate control measures are developed and included within the construction process.

1.4.A.2.27 Method Statements will be reviewed by the Contractor's Project Manager and, where necessary, by an appropriate environmental specialist. Where appropriate, and if required or necessary, method statements will be submitted to the relevant regulatory authorities.

1.4.A.2.28 Method statements must contain as a minimum:

- Location and duration of the activity;

[1] http://www.legislation.gov.uk/uksi/2015/51/contents/made

[2] http://www.hse.gov.uk/guidance/index.htm

- Work to be undertaken and methods of construction;
- Plant and materials to be used;
- Labour and supervision requirements;
- Health, safety and environmental considerations (including relevant control measures); and
- Permit or consent requirements.

Incident Procedure and Response

1.4.A.2.29 Contractors will develop and implement an Emergency Action Plan which will detail their response in the event of any incident on site. This will also take account of any process that is defined as part of the details agreed with the Marine Management Organisation (MMO) as set out in the deemed marine licence.

1.4.A.2.30 The Emergency Action Plan will:

- describe the procedure to be followed in the event of an incident (in accordance with the 'Incident Response' procedure below);
- describe the procedure for the notification of appropriate emergency services, authorities and personnel on the construction site;
- describe the procedure for the notification of relevant statutory bodies, environmental regulatory bodies, local authorities and local water and sewer providers;
- provide maps showing the locations of local emergency services facilities such as police stations, fire authorities, medical facilities, other relevant authorities, such as the Environment Agency or MMO, and also the address and contact details for each service and authority provide contact details for the persons responsible on the construction site for pollution incident response;
- provide contact details of a competent spill response company which can be contacted at short notice for an immediate response;
- ensure that site drainage plans and flood risk management plans are available on site and are kept up-to-date; and
- ensure staff competence and awareness in implementing plans and using pollution response kit.

1.4.A.2.31 All incidents associated with the construction of the Proposed Project, will be reported and investigated using the Emergency Action Plan (unless stated differently in other Management Plans).

1.4.A.2.32 The following procedure will be followed in the event of an incident and will be detailed further in the Emergency Action Plan.

- works will stop when it is safe to do so;
- the Environmental Manager and Safety, Health, Environment and Quality assurance (SHEQ) Manager will be contacted;
- the scale of the incident will be assessed;

- if the incident is controllable by staff on Site, remedial action will be taken immediately in accordance with the Plan;
- if the incident cannot be controlled by the staff on Site, emergency assistance will be sought;

- the appropriate enforcing authority will be contacted and informed, including:
  - the Environmental Agency for incidents affecting rivers, groundwater and major emissions to atmosphere;
  - the local sewerage undertaker for incidents affecting sewers;
  - the Local Authority Environmental Health Department for incidents that could affect the public;
  - the Food Standards Agency for incidents that have the potential to affect food through deposition on crops or land used for grazing livestock;
- an investigation panel will be set up which may include the Senior Project Manager and SHESQ Manager to instigate an investigation into the occurrence of the incident;
- the findings will be sent to the appropriate enforcing authority where necessary; and
- an action plan will be prepared to determine why the incident occurred and whether any modifications to working practices are required to prevent a recurrence. If necessary, the Construction Environmental Management Plans (CEMP) and SHE Plan will be updated (and any other plans as appropriate) and all workers will be notified.

1.4.A.2.33 The Environment Agency must be notified of a significant pollution incident as soon as possible to allow assessment and remediation measures to be taken. The notifications must be made in the first instance to the Environment Agency incident hotline (0800 80 70 60).

1.4.A.2.34 The Marine Management Organisation must be notified of any oil, fuel or contaminant spill to the marine environment as soon as possible. The notifications must be made in the first instance to (0300 200 2024 office hours; 07770 977 825 outside office hours).

Onshore Construction Site Layout and Good Housekeeping

1.4.A.2.35 The layout, appearance and operation of the construction site, site offices and compounds will be detailed prior to construction commencing and will comply with the commitments in this Outline CoCP and be managed in accordance with the measures set out in Table 1.4.A.2.

1.4.A.2.36 Good housekeeping practice will be applied at all times and all working areas will be inspected as required using a site audit programme and a written report on compliance will be provided to National Grid on a monthly basis.

Site Establishment

1.4.A.2.37 Site layout and appearance will be designed according to the following principles (further detail provided below):

- Installation of fencing where appropriate to secure working areas;
- Storage sites, temporary offices, fixed plant, machinery and equipment must be located to minimise environmental impacts, having due regard to neighbouring residential properties and the constraints of each work site;
- Noise generating activities must be sited away from noise sensitive receptors or screened;
- The site layout must also consider and minimise potential impacts from restricting natural light to adjacent residential properties or ecological receptors.

Fencing

1.4.A.2.38 Where necessary, working areas will be appropriately fenced off from members of the public and to prevent animals from straying onto a working area. National Grid will ensure, as far as reasonably practicable, that the visual intrusion of the construction site fencing is contained and limited, through limiting fencing to that which is essential for the safety of the public, site personnel and private assets.

1.4.A.2.39 Fencing and other means of enclosure, including those required for mitigating effects on protected species, will be inspected daily initially and then regularly as appropriate (protected species fencing is likely to remain as daily), repaired and repainted as necessary. Any temporary fencing will be removed as soon as reasonably practicable after completion of the works.

Lighting and visual intrusion

1.4.A.2.40 Construction compounds will not be lit at night outside of the working hours identified for the particular activity, except for welfare and site security cabins, which will include low level lighting. Motion sensor lighting will be used in areas of high security risk.

1.4.A.2.41 Site or welfare cabins, equipment and lighting will be sited so as to minimise visual intrusion insofar as is consistent with the safe and efficient operation of the work site. Site lighting will be positioned and directed to minimise glare and nuisance to residents and walkers, and to minimise distractions or confusion to passing drivers on railways or adjoining public highways.

1.4.A.2.42 Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during working hours for particular activities, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting.

1.4.A.2.43 On land where cable jointing is required, there will be a need for 24/7 lighting inside the covered structures that will surround the cable jointing bays. Motion sensor lighting will be required outside the covered structures for security and access and egress purposes.

1.4.A.2.44 When lighting is necessary, appropriate lighting and luminaires will be used to minimise the impact of lighting on ecological resources, including nocturnal species. Lighting will be designed to minimise spillage into surrounding habitats, such as sensitive watercourses, to avoid disturbance to wildlife.

Security

1.4.A.2.45 Temporary construction compounds including offices are adequately secured to protect the public and prevent unauthorised entry to or exit from the site. Access to the temporary construction compounds will be limited to specified entry points only and personnel entries/exits will be recorded and monitored for both security and health and safety purposes.

1.4.A.2.46 Site-specific assessments of the security and trespass risk will be undertaken at each site and appropriate control measures implemented. In addition, security units and/or remote cameras will be used to monitor sites.

Public Rights of Way

1.4.A.2.47 Parts of both the Suffolk and Kent Onshore Schemes cross a number of Public Rights of Way (PRoW). An initial crossing schedule is provided in Volume 2, Part 1, **Appendix 1.4.D Crossing Schedule** of this PEIR.

1.4.A.2.48 A PRoW Strategy will be prepared, detailing the agreed approach to any PRoW diversions or other mitigation required. An outline PRoW Strategy will be submitted with the application for development consent,

Welfare

1.4.A.2.49 No living accommodation will be permitted on the construction site. Onsite welfare facilities will be provided for all site workers and visitors. Welfare facilities will be kept clean and tidy.

1.4.A.2.50 Workers' Safety Information Sheets covering work practices and Control of Substances Hazardous to Health (COSHH) safety data sheets will be prominently displayed in welfare cabins.

1.4.A.2.51 Where portable generators are used to provide electricity for welfare units, industry best practice will be followed to minimise noise and pollution from such generators.

Waste management

1.4.A.2.52 A Site Waste Management Plan (SWMP) will be produced, which will set the framework for the management of wastes generated during the construction of the Proposed Project. It will document the decisions taken during the planning and design stages to minimise construction waste and set objectives and targets for the main waste types. It will also identify the following:

- responsibilities within the construction team for waste management.
- the types of waste (including invasive plant material) and the quantities likely to be generated.
- measures to be adopted during construction to minimise waste generated.
- opportunities for recycling and/or reuse.
- proposed treatment and disposal sites together with details of their Environmental Permit.
- provisions for staff training and use of the SWMP.

1.4.A.2.53 It will also record each movement of waste (including the reuse or recycling of materials on site) in accordance with the Waste (England and Wales) Regulations 2011 (and its amendments) (Ref. 1.4.A.4) and the arrangements for auditing the actions of other parties in the waste handling chain. Waste will only be transported by appropriately licensed carriers. The SWMP will be updated as the detailed design evolves and the main contracts are let.

1.4.A.2.54 The SWMP will clearly identify wastes that are likely to be produced during the construction phase the quantities likely to be generated and proposed treatment or disposal route.

1.4.A.2.55 The aim of the SWMP will be to minimise the volume of waste generated and maximise resource efficiency by applying the waste hierarchy (reduce – reuse – recycle – energy recovery - responsible disposal).

1.4.A.2.56 Provision will be made for the recycling of wastes including scrap metal, timber, paper, cardboard, plastics, toner cartridges, batteries in addition to waste oils from equipment and machinery where local schemes are available.

1.4.A.2.57 Wastes of different types will be segregated on site through the use of labelled skips, containers or bays indicating the types of waste each may accept and also the European Waste Code. Waste containers shall be in good condition and covered to prevent leachate spillage, waste escaping or ingress of rain water as appropriate.

1.4.A.2.58 Waste disposal will be carried out in accordance with the Waste (England and Wales) Regulations 2011 and Waste: Duty of Care – A Code of Practice (2016) (Ref. 1.4.A.5), as appropriate to current legislation.

1.4.A.2.59 Provision will be made for the correct storage and disposal of Hazardous Wastes as defined by and in accordance with the Hazardous Waste (England and Wales) Regulations 2005 and amendments (Ref. 1.4.A.6). The site will be registered as a producer of hazardous waste prior to any transfer of hazardous waste from site and a Hazardous Waste Consignment Note will accompany every transfer. In accordance with the Waste Acceptance Criteria (WAC) hazardous waste may need to be treated, and then tested, before disposal.

1.4.A.2.60 Appropriate site investigation and materials testing will be undertaken by specialist consultants prior to construction commencing to identify any ‘hazardous waste’ as defined in The Hazardous Waste (England and Wales) Regulations 2005 as amended and The List of Waste Regulations 2005 (as amended) (Ref. 1.4.A.7) so that it can be appropriately managed and disposed of.

Drainage

1.4.A.2.61 A surface water drainage strategy will be prepared and submitted with the application for development consent. The surface water drainage strategy will detail how surface water within the site during construction may affect a site and surrounding areas. It will establish how water is likely to behave on a site, and estimate the surface runoff rate, viable flow pathways and likely sub-surface infiltration.

1.4.A.2.62 A Drainage Management Plan (DMP) will also be prepared prior to the commencement of works. The DMP will specify measures to minimise the impact of the construction on existing drainage systems. This will be developed following detailed drainage investigations and hydrological assessments, which will determine potential location specific risks in relation to the water and natural environment and identify appropriate control measures to reduce the risks.

1.4.A.2.63 A phased approach may be taken to the development of the DMP to reflect the phasing of the construction programme and the different elements of the Proposed Project.

Clearance of Site on Completion

1.4.A.2.64 All temporary working areas and accesses will be removed when construction has been completed. Plant, temporary cabins and vehicles will be removed from the site.

1.4.A.2.65 All temporary land, including highways and public rights of way crossed by the works or other land temporarily occupied will be made good to the satisfaction of landowners and/or the relevant highways authority.

1.4.A.2.66 To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be discussed with landowners and where agreed, carried out on land within working areas. This will include a photographic record and/or aerial footage, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.

1.4.A.2.67 Reinstatement will include making good damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.

1.4.A.2.68 Where trees, tree groups or hedges are removed from working areas, construction compounds or temporary access routes, they will be replaced by new planting during reinstatement following completion of construction where possible subject to technical constraints. Planting will be managed for up to 5 years. Further details will be included in a landscape and ecological management plan (LEMP).

Inspection

1.4.A.2.69 The Contractor will undertake daily inspections, which will include monitoring. Daily assessment forms will be completed during the daily checks. Checks on equipment will be undertaken to reduce the risk of incidents occurring (for example oil leaks, or biosecurity breaches). As a minimum the following equipment will be inspected:

- fencing;
- waste storage facilities;
- oil separators;
- chemical storage facilities;
- foul water storage facilities;
- silt traps;
- drainage ditches and watercourses;
- storage vessels (including pumps, gauges, pipework and hoses);
- secondary containment (for example, secondary skins for oil tanks);
- spill response materials; and
- equipment with potential to leak oils and other liquids, for example, compressors and transformers.

1.4.A.2.70 Weekly inspections will be undertaken by National Grid and the contractors to ensure the daily checks are being undertaken correctly. The daily and weekly inspections will also include:

- reviewing the daily risk assessment forms;
- ensuring that faults and defects are identified and rectified; and
- providing data for performance monitoring.

1.4.A.2.71 Environmental performance data will be collected and collated into the SHE Plan by the contractor.

1.4.A.2.72 Immediate action including, if necessary, 'stopping the activity in question, where safe to do so', will be taken should any incidents or non-conformance with the CoCP, and later CEMP, be found during inspection.

1.4.A.2.73 National Grid and the contractors' monitoring reports will be made available to statutory and non-statutory bodies on request.

Marine Construction Management

1.4.A.2.74 A Marine Licence will be deemed within the DCO which will secure the necessary mechanism for protection of the marine environment associated with licenced activities. The deemed Marine Licence will provide consent for all construction works below the Mean High Water Spring tidal mark and includes Conditions to control those works and mitigate potential impacts.

Notifications

1.4.A.2.75 Notifications of the Offshore Scheme will be made; this shall include:

- Notice(s) to Mariners, Radio Navigational Warnings, NAVTEX and/or broadcast warnings will be issued prior to the commencement of installation works, to include the following as a minimum:
  - Notifications to the Trinity House, the Maritime and Coastguard Agency and relevant harbour and port authorities;
  - Regular vessel operators (e.g., ferry operators);
  - The Ministry of Defence (MoD) will be notified prior to commencement of Installation Phase activities within any Military Practice and Exercise Areas;
- Appropriate notification will be provided to advise beachgoers and those using the area for recreation in the close vicinity of each landfall;
- Other marine energy infrastructure operators to confirm operation dates and otherwise rationalise activity schedules, as required; and
- Regular consultation will be made with third-party infrastructure asset owners to notify them of any activities associated with the Offshore Scheme and avoid spatial and temporal interactions between vessels.

Marine Vessels

1.4.A.2.76 All vessels will follow the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) and International Convention for the Safety of Life at Sea 1974 (SOLAS);

1.4.A.2.77 All vessels will be in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL) regulations and will therefore be equipped with waste disposal facilities onboard. The discharging of contaminants is not permitted within 12 nm from the coast to preserve bathing waters;

1.4.A.2.78 Control measures and shipboard oil pollution emergency plans (SOPEP) will be in place and adhered to under MARPOL Annex I requirements for all vessels. Ballast water discharges from all vessels will be managed under International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention);

1.4.A.2.79 All vessels will adhere to the IMO guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines) (resolution MEPC.207(62);

1.4.A.2.80 Where possible, vessels will operate with dynamic positioning which will minimise anchor disturbance on the seabed;

1.4.A.2.81 All vessels will:

- display appropriate lights and shapes;
- all applicable vessels will broadcast their status on AIS at all times;
- all vessels will follow Port bylaws and General Directions, including VTS communications from ports.

1.4.A.2.82 Guard vessels will use RADAR with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions, will be employed to work alongside the installation vessel(s) during installation and maintenance work (which will also minimise anchor disturbance on the seabed);

1.4.A.2.83 A temporary 500 m Recommended Clearance Zone will be established around all vessels associated with the works.

1.4.A.2.84 Limits to wave height/wind speed conditions for operations/activities will be followed by all vessels.

1.4.A.2.85 Lighting on-board the vessels will be kept to the minimum level required to ensure safe operations and directed towards working areas. This will minimise disturbance to seabird species.

Pre-installation Surveys

1.4.A.2.86 Pre-installation surveys will inform detailed engineering and cable installation planning. They will focus on collection of detailed information within the preferred route for each of the cables, all within the Offshore Scheme. They will confirm the absence or presence of any new obstructions or significant changes to seabed conditions and bathymetry,. Survey methods may include:

- Geophysical survey including multibeam and single beam echo sounders, side scan sonar (SSS), and sub-bottom profiler (SBP);

- Magnetometer/gradiometer to identify magnetic anomalies and metallic targets;
- Visual methods including drop down video or remotely operated vehicle (ROV); and
- Geotechnical investigations such as vibrocore and cone penetration test (CPT).

Micro-routing/detailed design

1.4.A.2.87 Detailed route development and micro-routeing will be undertaken within the Offshore Scheme Boundary, informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints. This will include minimising the footprint as much as possible.

1.4.A.2.88 Navigational features such as charted or known anchorages, maintained channel depths and prohibited regions will be avoided where possible.

1.4.A.2.89 Changes to the sedimentary and metocean environments will be minimised by careful route selection and the use of appropriate burial techniques and cable protection methods such as fall pipes for the laying of rock placement.

1.4.A.2.90 Cable configuration will be optimised to minimise electromagnetic field (EMF) during detailed design and reduction in charted water depth to lowest astronomical tide (LAT) will be limited to less than 5% where possible.

1.4.A.2.91 A Cable Burial and Protection Plan will be submitted PINS, to include detailed micro-routeing, trenching methods and external protection measures for the final design of the Offshore Scheme prior to commencement of Installation Phase activities.

Marine Construction Environmental Management Plan

1.4.A.2.92 Prior to cable installation activities commencing, a Marine CEMP, including an Emergency Spill Response Plan (ESRP), Waste Management Plan, Marine Mammal Management Plan, Marine Non-Native Species (MNNS) Plan, Fisheries Liaison and Co-existence Plan (FLCP) will be developed and agreed with relevant stakeholders in accordance with the coastal and marine environment site guide.

Installation

1.4.A.2.93 Installation will be a 24-hour operation where viable to minimise overall installation time, maximise use of fair-weather windows, and take advantage of vessel and equipment availability.

Cable crossings

1.4.A.2.94 Each cable crossing will be designed in detail in accordance with the International Cable Protection Committee recommendations (Ref. 1.4.A.8). Proximity and Crossing Agreements will be agreed with third-party infrastructure owners.

1.4.A.2.95 The Crossing Agreement describes the rights and responsibilities of the parties and also the design of the crossing. Crossing design will be in line with industry standards, using procedures and techniques agreed with the cable and pipeline owners.

1.4.A.2.96 Proximity agreements describe the approach to works close to, but not crossing third party assets, to ensure safety and manage interactions between the two projects.

Landfall Installation

1.4.A.2.97 Trenchless techniques will be used at both landfalls[3] for the installation of the cables in the transition zone between the Onshore Schemes and the Offshore Scheme.

1.4.A.2.98 The landfall and associated temporary working area for whichever trenchless technique is employed, will be securely fenced with hoarding and access from the local road network, suitable for haulage equipment.

1.4.A.2.99 There is a requirement for 24 hour working at the landfall associated with trenchless activities. Control measures will be put in place to minimise impacts on sensitive receptors at this location.

- Lighting will be required to safely illuminate the drilling area as well as the associated equipment and safe access between equipment. Lighting would be designed in line with best practice and current guidance. This could include the use of directional lighting and use of directional beams, non-reflective surfaces and barriers and screens, to avoid light nuisance whilst maintaining safety.
- In order to mitigate received noise levels at the closest noise sensitive receptors, acoustic barriers of an appropriate height and specification will be erected around the perimeter of the temporary working area and/or around specific items of plant for the duration of the landfall works. Alternatively, and where practicable, surplus spoil arising from preparatory works will be used to form bunds around the working areas or specific items of plant to attenuate noise.

1.4.A.2.100 Prior to construction, the Applicant will identify the positioning and orientation of plant and equipment involved with the landfall construction with the aim of reducing noise levels at noise sensitive receptors, where practicable. The general positioning of the plant and equipment will be specified within a Construction Method Statement.

1.4.A.2.101 Any fluids used for operations will be biologically inert and selected from the OSPAR List of Substances/Preparations Used and Discharged Offshore which are Considered to Pose Little or No Risk to the Environment (PLONOR). For example:

- Drilling fluids will be recycled, treated, and reused as far as possible, and any waste drilling fluid will be transported offsite for treatment and disposal; and
- Losses of drilling fluids are unavoidable; however they will be minimised insofar as practicable through the implementation of industry best practice for example, clearing runs or reducing the volume of drilling fluids in the borehole prior to breakout to the marine environment.

1.4.A.3 Control and Management Measures

1.4.A.3.1 Control and management measures have been identified that would reduce impacts from the Proposed Project on the environment (Table 1.4.A.2). These are generally measures that would normally be implemented on a well-run construction site, but also include a number of good practice measures that have been identified through the PEIR and EIA process in order to support a proportionate assessment. They also include measures that have typically been employed on other National Grid projects.

[3] The area (from Mean Low Water Springs) where the offshore cables would make contact with land, and connect to the onshore cables.

The contractor(s) will be expected to demonstrate compliance with these measures during construction.

1.4.A.3.2 Throughout this document, each standard measure has been assigned a reference number, for example (GG01). This is for ease of cross-reference.

Table 1.4.A.2: Control and management measures

Ref	Control and management measures
	General project commitments
GG01	The project will be run in compliance with all relevant legislation, consents and permits.
GG02	The project design will be compliant with the guidelines and policies relating to electromagnetic fields stated in National Policy Statement EN-5, including the International Commission on Non-Ionizing Radiation Protection guidelines (1998).
GG03	A CEMP, a Landscape and Ecological Management Plan (LEMP) and a Construction Traffic Management Plan (CTMP) will be produced prior to construction.
GG04	The CEMP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake daily site inspections to check conformance to the Management Plans. The name and contact details of person(s) accountable for issues relating to dust, waste, water, noise, vibration and soil will be displayed at site boundary.
GG05	A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced Environmental Clerk of Works (ECoW) will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CEMP. The ECoW will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures. The ECoW will be supported as necessary by appropriate specialists, including ecologists and arboriculturists.
GG06	Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the project. Topics will include but not be limited to: — pollution prevention and pollution incident response; — dust management and control measures; — location and protection of sensitive environmental sites and features; — adherence to protected environmental areas around sensitive features; — working hours and noise and vibration reduction measures; — working with potentially contaminated materials;

Ref	Control and management measures
	— waste management and storage; — flood risk response actions; and — agreed traffic routes, access points, etc.
GG07	A full photographic/aerial footage and descriptive record of condition (pre-condition survey) will be carried out of the working areas that may be affected by the construction activities prior to these works commencing. This record will be available for comparison following completion of reinstatement works to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey, and is agreeable with landowners affected by the works.
GG08	Land used temporarily will be reinstated where practicable to its pre-construction condition and use, unless agreed otherwise. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and quality to those that were removed, with landowner consultation.
GG09	Where sensitive features are to be retained within or immediately adjacent to the draft Order Limits, an appropriate protective area will be established using appropriate fencing and signage and will be inspected, repaired and replaced as necessary. The protective areas will be shown on the Retention and Reinstatement Plans contained within the LEMP.
	Construction site setup
GG10	The name and contact details for the project will be displayed at the entrance to all compounds. This will include an emergency number.
GG11	Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
GG12	Appropriate site layout and housekeeping measures will be implemented by the contractor(s) at all construction sites. This will include but not be limited to: - preventing pests and vermin control and treating any infestation promptly, including arrangements for the proper storage and disposal of waste produced on site; — access gates to be located at least 10 m from receptors where possible. — inspecting and collecting any waste or litter found on site; — locating or designing site offices and welfare facilities to limit the overlooking of residential properties;

Ref	Control and management measures
	– locating designated smoking/vaping areas to avoid nuisance to neighbours; – managing staff/vehicles entering or leaving site, especially at the beginning and end of the working day; and – managing potential off-site contractor and visitor parking.
GG13	Plant and vehicles will conform to relevant applicable standards for the vehicle type as follows: – Euro 4 (NOx) for petrol cars, vans and minibuses; – Euro 6 (NOx and PM) for diesel cars, vans and minibuses; and – Euro VI (NOx and PM) for lorries, buses, coaches and Heavy Goods Vehicles (excluding specialist abnormal indivisible loads). Vehicles will be correctly maintained and operated in accordance with manufacturer's recommendations and in a responsible manner. All plant and vehicles will be required to switch off their engines when not in use and when it is safe to do so. In addition, plant and vehicles will conform to relevant applicable standards for the vehicle type.
GG14	Materials and equipment will not be moved or handled unnecessarily. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.
GG15	Fuels, oils and chemicals will be stored responsibly, away from sensitive water receptors. Where practicable, they will be stored >15m from watercourses, ponds and groundwater dependent terrestrial ecosystems. Where it is not practicable to maintain a >15m distance, additional measures will be identified. All refuelling, oiling and greasing of construction plant and equipment will take place above drip trays and also away from drains as far as is reasonably practicable. Vehicles and plant will not be left unattended during refuelling. Appropriate spill kits will be made easily accessible for these activities. Potentially hazardous materials used during construction will be safely and securely stored including use of secondary containment where appropriate. Stored flammable liquids such as diesel will be protected either by double walled tanks or stored in a bunded area with a capacity of 110% of the maximum stored volume. Spill kits will be located nearby.
GG16	Runoff across the site will be controlled through a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding. There will be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of an emergency).

Ref	Control and management measures
GG17	Where required, wash down of vehicles and equipment will take place in designated areas within construction compounds. Wash water will be prevented from passing untreated into watercourses and groundwater. Appropriate measures will include use of sediment traps. Ensure there is an adequate area of hard surfaced road between the wash facility and the site exit, wherever site size and layout permits.
GG18	Where required, wheel washing will be provided at each main construction works compound access point on to the highway. An adequate supply of water will be made available at these locations at all times. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
GG19	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. Avoid dry sweeping of large areas.
GG20	Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
GG21	Bonfires and the burning of waste material will be prohibited.
GG22	Construction lighting will be of the lowest levels necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats.
GG23	A Site Waste Management Plan (SWMP) will be developed prior to construction. The contractor(s) will maintain and monitor the SWMP throughout the construction phase and oversee that any sub-contractor(s) adhere to the SWMP. The SWMP will set out, in an auditable manner, how waste will be reduced, reused, managed and disposed of in accordance with the waste hierarchy. Dedicated areas will be identified on the construction plans to allow materials and wastes to be segregated at source, reducing the risk of damage or contamination.
GG24	A construction phase Safety Health and Environment (SHE) Plan prior to construction works commencing and will ensure that adequate arrangements and welfare facilities are in place to cover the safety of construction staff, visitors to site, the public and compliance with appropriate legislation and guidance.
GG25	An Emergency Action Plan will be developed for the construction phase which will outline procedures to be implemented in case of unplanned events, including but not limited to site flooding and pollution incidents.
GG26	Stone pads or equivalent will be installed in areas where heavy equipment, such as cranes and piling rigs, are to be used. The stone pads will provide stable working areas and will reduce disturbance to the ground. The stone pad area will be

Ref	Control and management measures
	stripped of the topsoil, which will be stored and reinstated in accordance with the soil management measures contained in the CEMP.
GG27	Working areas will be appropriately fenced. The type of fencing installed will depend on the area to be fenced and will take into consideration the level of security required in relation to the surrounding land and public access, rural or urban environment and arable or stock farming. For some locations the fence used may also serve to provide acoustic and visual screening of the work sites and reduce the potential for disturbance of users in the surrounding areas. Fencing will be regularly inspected and maintained and removed as part of the demobilisation unless otherwise specified.
GG28	Members of the community and local businesses will be kept informed regularly of the works through active community liaison. This will include notification of noisy activities, heavy traffic periods and start and end dates of key phasing. A contact number will be provided which members of the public can use to raise any concerns or complaints about the project. All construction-related complaints will be logged by the contractor(s) in a complaints register, together with a record of the responses given and actions taken.
GG29	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods
GG30	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. This should include regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.
	Landscape and visual
LV01	The contractor(s) will retain vegetation where practicable. Where vegetation is lost and trees cannot be replaced in situ due to the restrictions associated with land rights required for operational safety, native shrub planting approved by National Grid will be used as a replacement, in accordance with the outline vegetation reinstatement plans included within the LEMP.
LV02	The contractor(s) will apply the relevant protective principles set out in British Standard (BS) 5837:2012: Trees in relation to design, demolition and construction. This will be applied to trees within the draft Order Limits which will be preserved through the construction phase, and to trees outside of the draft Order Limits where such measures do not hinder or prevent the use of the relevant working width for construction. All works to high grade trees, including trees under Tree Preservation Orders and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist.

Ref	Control and management measures
LV03	A five-year aftercare period will be established for all reinstatement and mitigation planting.
LV04	Separation and storage of subsoil and topsoil to ensure no degradation in quality and reinstatement undertaken as soon as possible after completion of construction of each section/area of works.
LV05	Temporary and separate placement of topsoil and subsoil will be stored adjacent to the trench with the additional height of the subsoil storage used on whichever side requires greater screening benefit, where practicable.
	Ecology and biodiversity
B01	The contractor(s) will comply with relevant protected species legislation. Appropriate licences will be obtained where necessary from Natural England for all works affecting protected species as identified by the ES and through pre-construction surveys. All applicable works will be undertaken in accordance with the relevant requirements and conditions set out in those licences.
B02	The assumption will be that vegetation with the potential to support breeding birds will not be removed during the breeding bird season (March to August inclusive). If any works become necessary during the breeding bird season, works will be supervised by an Environmental Clerk of Works. Appropriate protection measures will be put in place should active nests be found. These will include exclusion zones around active nests until chicks fledge or nests become inactive as determined by monitoring by the Environmental Clerk of Works.
B03	Where there will be a risk of animal entrapment, a means of escape will be installed into all excavations left open overnight.
B04	To control the spread of invasive weeds in accordance with the Wildlife and Countryside Act 1981, any plant or machinery that has been used in areas infested with invasive species (both terrestrial and aquatic), such as Japanese knotweed and Himalayan balsam, will be thoroughly cleaned. Water used to clean vehicles will be controlled to prevent the spread of the plant (through seeds, rhizomes, fragments, etc.). The area will be cordoned off to prevent any inadvertent spreading.
B05	All habitats suitable for common reptiles will be subject to two-stage habitat manipulation that will take place between mid-March and mid-October. Firstly, vegetation will be cut to approximately 150mm (with the arisings removed) under the supervision of an ECoW and the site left for a minimum of two days to allow reptiles to naturally disperse from the area. Secondly, vegetation will be cleared down to ground level under the supervision of an ECoW. Vegetation will be cleared using appropriate equipment based on the type of vegetation to be removed, the area affected, and the risk of mortality or injuring reptiles. Construction works could commence immediately after completion of the second stage. Reptile hibernacula will be retained and protected during construction where practicable. If unavoidable, the removal of vegetation

Ref	Control and management measures
	and groundworks at hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided.
B06	Where necessary, alternative roost structures (bat boxes) will be provided (with landowner consent) on retained trees within the draft Order Limits or areas outside of the draft Order Limits agreed with relevant landowners. Three boxes will be provided for each tree with moderate bat roost potential to be felled. Five boxes will be provided for each tree with high bat roost potential to be felled.
B07	Where the works require the crossing or removal of hedgerows, the gap will be reduced to a width required for safe working. Where hedge removals are necessary, 'dead hedging' should be used, where practicable, in the interim periods to retain connectivity during construction. Dead hedging can comprise vegetation arisings or artificial provision, such as willow screening panels or Heras fencing covered in camouflage netting. New hedgerow planting will contain native, woody species of local provenance.
	Cultural heritage
H01	Locations of known archaeological interest/value, or areas where archaeological work is planned, will be signposted/fenced off to avoid unintentional damage.
H02	Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the Project Team will inform the relevant local planning authority and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the Proposed Project parameters.
H03	Archaeological excavation, recording, and publication to be undertaken where archaeological features cannot be avoided. A scope of works will be agreed with heritage stakeholders (including the relevant County Archaeologist) prior to works commencing in the relevant area, and agreed in the mitigation strategy/site specific Written Scheme of Investigation.
H04	Archaeological Strip, Map, and Record, to be undertaken in pre-agreed areas of archaeological potential/features. Scope of works to be agreed with heritage stakeholders (including the relevant County Archaeologist) prior to works commencing in the relevant area and agreed in the mitigation strategy/site specific Written Scheme of Investigation.
H05	Archaeological Watching Brief to be undertaken in pre-agreed areas of archaeological potential/features. Scope of works to be agreed with heritage stakeholders (including the relevant County Archaeologist) prior to works commencing in the relevant area and agreed in the mitigation strategy/site specific Written Scheme of Investigation.

Ref	Control and management measures
H06	Palaeo-environmental modelling/profiling in areas of potential. Scope of works to be agreed with heritage stakeholders (including the relevant County Archaeologist) prior to works commencing, and agreed in the mitigation strategy/site specific Written Scheme of Investigation
	Water environment
W01	All works within main rivers or ordinary watercourses will be in accordance with a method approved under environmental permits issued under the Environmental Permitting Regulations or the protective provisions of the DCO for the benefit of the Environment Agency and the Lead Local Flood Authorities and Internal Drainage Boards.
W02	For open cut watercourse crossings and installation of vehicle crossing points, good practice measures will include but not be limited to: – where practicable, reducing the working width for open cut crossings of a main or ordinary watercourse whilst still providing safe working; – installation of a pollution boom downstream of open cut works; – the use and maintenance of temporary lagoons, tanks, bunds, silt fences or silt screens as required; – have spill kits and straw bales readily available at all crossing points for downstream emergency use in the event of a pollution incident; – the use of all static plant such as pumps in appropriately sized spill trays; – prevent refuelling of any plant or vehicle within 15m of a watercourse; – prevent storing of soil stockpiles within 15m of a main river; – inspect all plant prior to work adjacent to watercourses for leaks of fuel or hydraulic fluids; and – reinstating the riparian vegetation and natural bed of the watercourse, using the material removed when appropriate, on completion of the works and compacting as necessary. If additional material is required, appropriately sized material of similar composition will be used.
W03	Riverbank and in-channel vegetation will be retained where not directly affected by installation works. Natural substrate will be provided through temporary watercourse crossings box culverts.

Ref	Control and management measures
W04	Where watercourses are to be crossed by construction traffic, measures to be applied include the use of 'flume' pipes or temporary spanned bridges. Once the flume pipe is installed, the area above the flume pipe will be backfilled and construction mats placed over the backfilled area to permit the passage of plant, equipment, materials and people. Flume pipes will be sized to reflect the span width and the estimated flow characteristics of the watercourse under peak flow conditions and kept free from debris. Where used, temporary bridges will be designed specifically to consider the span length and the weight and size of plant and equipment that will cross the bridge.
W05	The contractor(s) will comply with all relevant consent conditions or DCO provisions regarding de-watering and other discharge activities. This will particularly be with regard to volumes and discharge rates and will include discharges to land, water bodies or third-party drains/sewers.
W06	Where new or additional surfacing is required on any access tracks and compound areas, Sustainable Drainage Systems (SuDS) will be incorporated, appropriate to the existing ground conditions. The project will incorporate appropriate surface water drainage measures into its final design for the haul roads and access tracks so that they do not lead to a significant increase in flood risk. Temporary haul routes within Flood Zone 3 and areas of high and medium risk of flooding from surface water will be removed at the end of the construction phase and the ground surface will be reinstated to pre-project levels. No construction materials should be stored within Flood Zone 3 and areas of high and medium risk of flooding from surface water, where this cannot be avoided adequate mitigation measures will be applied (as identified in the Flood Risk Assessment to be completed).
W07	The contractor(s) will subscribe to the Environment Agency's Floodline service, which provides advance warning of potential local flooding events, and subscribe to the Met Office's Weather Warnings email alerts system and any other relevant flood warning information. The contractor(s) will implement a suitable flood risk action plan, which will include appropriate evacuation procedures should a flood occur or be forecast.
W08	Active private water supplies will be identified with landowners through the landowner discussions. Appropriate measures will be considered during construction. In the event of a landowner or tenant reporting that installation activities have affected their private water supplies, an initial response will be provided within 24 hours. Where the installation works have affected a private water supply, an alternative water supply will be provided, as appropriate.
W09	In the event of a significant spill during construction, all relevant landowners/tenants will be contacted within 24 hours, within 250 m of the spill, to determine if there are any private water supplies that might be affected; an assessment of the likelihood of groundwater contamination reaching identified private water supplies will be undertaken, and where a private water supply is judged likely to be affected, an alternative water supply will be provided, as appropriate.

Ref	Control and management measures
W10	Where a main river is crossed by a trenchless crossing, the cables will be laid at least 1m below the hard bed level of the river and will remain at or below this level for a distance of not less than 3m from the brink of the riverbank before rising at a slope no greater than 1 vertical in 1.5 horizontal. Marker posts shall also be positioned on each bank of the river to indicate the location of the under-crossing and the nature of the works.
W11	Severance of existing land drainage routes, including agricultural field drainage systems would be managed during construction through provision of temporary alternative drainage routes, and these drainage systems would be permanently reinstated or rerouted ensuring their existing function is maintained.
W12	Surface water drainage from permanent above ground infrastructure would be managed using sustainable drainage systems (SuDS) in accordance with policy and guidance requirements of the relevant Lead Local Flood Authorities.
	Geology and hydrogeology
GH01	Intrusive ground investigations and assessment will be undertaken prior to construction which will inform appropriate geotechnical design in relation to the site/structure specific ground conditions including ground instability/adverse ground conditions
GH02	Construction methods such as appropriate piling techniques (if required) to minimise the risk of mixing of aquifer bodies through the creation of new. This includes the provision of a Foundation Works Risk Assessment (FWRA), which would be undertaken once the proposed foundation solutions are known, in accordance with EA guidance 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination' (EA, 2001).
GH03	Use of appropriate occupational health and safety measures e.g. Personal Protective Equipment (PPE), and statutory health and safety compliance (e.g. compliance with the Confined Spaces Regulations, 1997 in relation to ground gas from working in confined spaces/trenches) to minimise the risks associated with anticipated/unexpected contamination. Based on risk assessment informed by site specific information.
GH04	Appropriate training of construction and maintenance workers in the handling and use of potentially hazardous substances and the associated risks.
GH05	All use and storage of chemicals and fuels are to be undertaken in accordance with Environment Agency guidance, and the Control of Pollution (Oil Storage) Regulations. The use and storage of chemicals and fuels will also be controlled and monitored under the Construction and Environmental Management Plan (CEMP) which will include, for example, procedures for good general construction site practices, environmental and waste management procedures, regular vehicle checks, use of spill kits, correct waste storage and disposal, use of oil-water separators as necessary (for example,

Ref	Control and management measures
	for drainage from refuelling areas), collection of process water from the washout/cleaning of ready-mix concrete vehicles and equipment for treatment/disposal
GH06	The control of earthworks or materials movement (including any re-use of materials) under appropriate Environmental Permits, exemptions or CL:AIRE 'The definition of Waste: The development industry Code of Practice (2011).
GH07	Any temporary dewatering activities during construction will be undertaken in accordance with EA guidance, and if required, an Abstraction Licence and Environmental Permit (for the discharge) and will be limited to the depth and time required to facilitate construction activities.
GH08	A protocol will be developed for dealing with any unexpected contamination.
	Agriculture and soils
AS01	Soil management measures will be included within the CEMP. Measures will include but not be limited to the following: – based on the soil resources present; – how topsoil and subsoil will be stripped and stockpiled; – suitable conditions for when handling soil will be undertaken, for example avoiding handling of waterlogged soil; – indicative soil storage locations; – how soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil; – specific measures for managing sensitive soils; – suitable protective surfacing where soil stripping can be avoided, and weed suppression encouraged, based on sensitivity of the environment and proposed works; – approach to reinstating soil that has been compacted, where required; and – details of measures required for soil restoration.
AS02	Where land is being returned to agricultural use, the appropriate soil conditions (for example through the replacement of stripped layers and the removal of any compaction) will be recreated. This will be achieved to a depth of 1.2m (or the

Ref	Control and management measures
	maximum natural soil depth if this is shallower) except over buried cables where the reinstated soil depth will be approximately 1.1m.
AS03	Access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through the landowner discussions. This may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties at the start of the project, with any changes communicated in advance of the change being implemented. Where field-to-field access points require alteration as a result of construction, alternative suitable field access will be provided in consultation with the landowner/occupier.
AS04	Existing water supplies for livestock will be identified pre-construction. Where supplies will be lost or access compromised by construction works, temporary alternative supplies will be provided. Water supplies will be reinstated following construction.
AS05	Consultation with affected landowners will be carried out to investigate the current extent of land drainage. A scheme of pre-construction land drainage will be designed with the intent of maintaining the efficiency of the existing land drainage system and to assist in maintaining the integrity of the working area during construction. The project may include a system of 'cut-off' drains which feed into a new header drain and the project will also take into account surface water runoff measures.
AS06	Should animal bones be discovered during construction, which may indicate a potential burial site, works will cease, and advice will be sought from the Animal Health Regional Office on how to proceed, relevant to the origin and age of the materials found.
AS07	All movement of plant and vehicles between fields will cease in the event of a notification by the Department for Environment, Food and Rural Affairs (Defra) of a disease outbreak in the vicinity of the site that requires the cessation of activities. Advice will be sought from Defra in order to develop suitable working methods required to reduce the biosecurity risk associated with the continuation of works.
AS08	Clay bungs or other vertical barriers will be constructed within trench excavations where deemed necessary by a suitably experienced person, to prevent the creation of preferential drainage pathways.
	Traffic and transport
TT01	The CTMP will set out measures to reduce route and journey mileage to and from and around site, and prevent nuisance to the residents, businesses and the wider community caused by parking, vehicle movements and access restrictions. It will also provide suitable control for the means of access and egress to the public highway and set out measures for the

Ref	Control and management measures
	maintenance and upkeep of the public highway. The plan will also identify access for emergency vehicles. It will also set out measures to reduce safety risks through construction vehicle and driver quality standards and measures to manage abnormal loads.
TT02	The contractor(s) will implement a monitoring and reporting system to check compliance with the measures set out within the CTMP. This will include the need for a GPS tracking system to be fitted to Heavy Goods Vehicles to check for compliance with authorised construction routes. The contractor(s) will also be expected to monitor the number of construction vehicles between the site and the strategic road network. Deviations from the authorised routes or changes to traffic levels that are higher than the CTMP assumptions will require discussion of the need for additional mitigation measures with highways authorities.
TT03	All designated Public Rights of Way (PRoWs) will be identified, and any potential temporary and/or permanent diversions applied for/detailed in the DCO. All designated PRoWs crossing the working area will be managed with access only closed for short periods while construction activities occur. Any required diversions will be clearly marked at both ends with signage explaining the diversion, the duration of the diversion (for temporary diversions) and a contact number for any concerns.
	Noise and vibration
NV01	Construction working will be undertaken within the agreed working hours set out within the DCO. Best practicable means to reduce construction noise will be set out within the CEMP.
NV02	Construction traffic routes, access tracks, and construction haul routes will be surveyed for damage and irregularities (e.g. potholes) that may lead to vibration from construction traffic. Access tracks and construction haul routes will be well maintained.
NV03	Proposed substations and converter stations will be designed such that noise from their normal operation does not cause a significant adverse effect at nearby noise sensitive receptors. Additionally, where feasible the substation and converter station designs will seek to achieve noise levels at nearby noise sensitive receptors in line with the aims the local authorities, or otherwise as low as reasonably possible.
	Air Quality
AQ01	Develop and implement a Dust Management Plan which may include measures to control other emissions, approved by the Local Authority. The Dust Management Plan will include measures such as:

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	- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. - Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. - Erect solid screens or barriers around dusty activities or fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. - Keep site fencing, barriers and scaffolding clean using wet methods. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site, cover as described below
AQ02	Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible, commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.
AQ03	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
AQ04	Inspect on-site haul routes for integrity and investigate necessary repairs to the surface as soon as reasonably practicable. Record all inspections of haul routes and any subsequent action in a site log book. Impose and signpost a maximum-speed-limit on unsurfaced haul roads and work areas. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
AQ05	Use enclosed chutes and conveyors and covered skips. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
AQ06	Materials storage - Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. - Avoid scabbling (roughening of concrete surfaces) if possible. - Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

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	- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
AQ07	Ensure all equipment complies with the appropriate Non-Road Mobile Machinery standards.
	General Project Commitments (Marine)
GM01	Designated (and as minimal as possible) anchoring areas and protocols shall be employed during marine operations to minimise physical disturbance of the seabed
GM02	As-built locations of cable and external protection will be supplied to UKHO (Admiralty), The Crown Estate and Kingfisher (KIS-ORCA)
GM03	An offshore Construction Environmental Management Plan (CEMP) including an Emergency Spill Response Plan and Waste Management Plan, Marine Pollution Contingency Plan (MPCP), Shipboard Oil Pollution Emergency Plan (SOPEP) and a dropped objects procedure will be produced prior to installation
	Landfall and Vessel Set Up
LVS01	All project vessels shall adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention) (IMO, 2017)
LVS02	All project vessels must comply with the International Regulations for Preventing Collisions at Sea (1972) (IMO, 2019a), regulations relating to International Convention for the Prevention of Pollution from Ships (the MARPOL Convention 73/78) (IMO, 2019e) with the aim of preventing and minimising pollution from ships and the international Convention for the Safety of Life at Sea (SOLAS, 1974).
LVS03	An installation machine failure contingency plan will be produced prior to installation
LVS04	All oil, fuel and chemical spills will be reported to the MMO Marine Pollution response team
LVS05	Drilling fluids required for trenchless operations will be carefully managed to minimise the risk of breakouts into the marine environment. Specific avoidance measures would include: — the use of biodegradable drilling fluids (pose little or no risk (PLONOR) substances) where practicable, — drilling fluids will be tested for contamination to determine possible reuse or disposal; and

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	– If disposal is required drilling fluids would be transported by a licensed courier to a licensed waste disposal site.
	Marine Physical Environment
MPE01	During the course of cable route clearance, specific activities will be completed to remove items from the seabed. Out of Service cables will be removed as per industry guidelines, larger debris including lost fishing gear will be removed prior to cable installation and a pre-lay grapnel run will be completed to ensure smaller debris is removed. In the event that abandoned, lost or discarded fishing gear ('ALDFG') is encountered, it may be necessary in certain circumstances to bring ALDFG onto the vessel deck. In these instances, marked ALDFG will be returned to the MMO/local Inshore Fisheries and Conservation Authority (IFCA) for onward retrieval by the owner of the marked gear, in line with existing best practice. Not all gear (particularly 'active' gear) is marked; if necessary to bring onto the vessel deck, unmarked gear will be disposed of via conventional onshore waste channels. Recovered objects identified as 'wreck' must be reported to the Receiver of Wreck within 28 days under the obligations of the Merchant Shipping Act 1995 and must be stored and maintained at the finder's expense until a decision is made on ownership. It is recommended that advice is sought from the marine archaeological consultant with regards survey campaigns and data assessments, to ensure, where possible, 'wreck' of possible or known archaeological interest can be avoided and left *in situ*.
MPE02	The minimum depth of lowering (DOL) to the top of the cable is 0.5 m (in areas of bedrock), with a target DOL for the Proposed Project approximately 1.5 m to 2.5 m, to be achieved where possible dependant on the seabed geology.
MPE03	Cable protection features (e.g. rock placement, mattresses and grout bags) will be installed only where considered necessary for the safe operation of the Project. This includes the repair of cables due to accidental damage.
	Benthic Ecology
BE01	A biosecurity plan will be produced for the project, following the latest guidance on INNS from the GB non-native species secretariat.
BE02	All project vessels shall adhere to the International Maritime Organisation (IMO) Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines 2011).
BE03	Any material introduced into the marine environment, such as rock protection material, will be from a suitable source or cleaned to ensure no INNS can be introduced.

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BE04	Where possible, cable protection materials will be selected to match the environment (e.g. when cables are installed in areas of cobbles or other natural rock features, rock of similar diameter and material as the receiving environment should be used as an alternative to the current normal approach of using terrestrially sourced granite) (NE and JNCC, 2022).
	Fish and Shellfish
FSF01	In accordance with the Department of Energy and Climate Change report and MMO recommendations, the target DOL will be between 1.5 m to 2.5 m (subject to local geology and obstructions) to minimise the effects of EMF for fish receptors.
	Marine Mammals
MM01	Adherence to JNCC guidelines, where appropriate, regarding the minimisation of impacts from underwater sound generated from known project activities of, geophysical surveys and UXO detonation.
MM02	Adherence to JNCC guidance for assessing the significance of noise disturbance against conservation objectives of the SNS SAC.
	Ornithology
O01	The CoCP and CEMP will outline the best practice mitigation measures required to be implemented during construction. This would include measures to prevent accidental spillages from occurring and to minimise disturbance of sediments.
	Marine Archaeology
MA01	A Written Scheme of Investigation (WSI) including a Protocol for Archaeological Discoveries will be agreed with the Archaeological Curator via the Regulator and implemented (**Volume 2, Part 4, Appendix 4.7.B Written Scheme of Investigation**) prior to works commencing. Unavoidable impacts to potential archaeological receptors would be addressed through a series of agreed control and management measures to deal with the discoveries once impacts have occurred. These measures would be outlined in a WSI and would be in place throughout the construction, operation, maintenance and decommissioning phases. The WSI would address unavoidable impacts that may occur anywhere in the Offshore Scheme and particularly where the nature of the Proposed Project means that some details have not been confirmed when an application is submitted, allowing flexibility within clearly defined parameters (Rochdale Envelope or Design Envelope) in accordance with archaeological best practice. A project-specific Protocol for Archaeological Discoveries will be established to support the reporting of unexpected archaeological material during the lifetime of the Project. Impact to unexpected archaeological material is reduced by promptly receiving archaeological advice and undertaking recording and/or conserving any objects that have been

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	disturbed. Additional investigation of features with an uncertain identity or archaeological value can often mean their true nature and value can be better understood. A Protocol for Archaeological Discoveries reduces the impact on the marine historic environment by enabling Project staff to report their finds in a manner that is convenient and effective. Any additional marine geophysical survey, diver or ROV survey footage that takes place within the area will be assessed by a suitably qualified marine geophysicist or marine archaeologist, as appropriate. If an archaeologically important site is subsequently discovered during Project works, a temporary exclusion zone (TEZ) will be established to allow for further investigation to take place. The TEZ would then be re-evaluated, removed or expanded, based on the results of further investigations
MA02	A Written Scheme of Investigation (WSI) will also include offsetting of archaeological impact where necessary through the completion of a palaeo-environmental assessment of deposits of high geoarchaeological potential which may be disturbed.
MA03	The project will be run in compliance with all relevant legislation, consents and permits, for example the Marine and Coastal Access Act 2009, Protection of Military Remains 1986, Merchant Shipping Act 1995, Protection of Wrecks Act 1973 and Ancient Monuments and Archaeological Areas Act 1979.
MA04	Locations of known marine archaeological interest/value within the marine environment will be avoided by all marine vessels by the implementation of appropriately sized Archaeological Exclusions Zones (AEZs). No works that could impact the seabed will be undertaken within the extent of an AEZ during the construction, operation and maintenance, or decommissioning phases of the Offshore Scheme. AEZs may be amended (enlarged, reduced, moved or removed) because of further data assessment or archaeological field evaluation and must be undertaken in consultation with the Archaeological Curator, Historic England.
MA05	Where a previously unknown heritage asset is discovered, or a known heritage asset proves to be more significant than foreseen at the time of application, the project will inform the MMO, as advised by Historic England, and will agree a solution that protects the significance of the new discovery, so far as is practicable, within the project parameters.
MA06	Archaeological features of lower archaeological value will be avoided where practicable. Micro-siting of the cable route and siting of infrastructure and temporary works will help to avoid seabed features, such as geophysical anomalies of archaeological potential. It is recommended that consultation with the archaeological consultant is undertaken with regards to routing around such anomalies of archaeological potential.
MA07	Archaeological input at the planning stages of any further survey work should be undertaken. Archaeological Method Statements will be prepared for the following additional works: ground truthing of anomalies (e.g. Remotely Operated Vehicle (ROV), diver survey or coordination with UXO campaigns); marine geophysical or geotechnical surveys; intertidal or marine watching briefs; measures to protect marine heritage assets from indirect impacts (e.g. physical buffers); and

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	post-construction monitoring works. Method Statements will be prepared by a suitably qualified, experienced and accredited marine archaeological consultant and will require approval by the Regulator (the MMO), and the Archaeological Curator (Historic England for marine works and the respective local authority curatorial bodies that serve Suffolk and Kent for works in the intertidal zone). See the Mitigation Measures section below for additional works that will require archaeological Method Statements.
	Shipping and Navigation
SN01	A risk based burial approach will be used where cables will be buried to a minimum DOL to the top of the cable of 0.5 m (in areas of bedrock), with a target DOL for the Proposed Project of approximately 1.5 m to 2.5 m, assessing cable protection risk factors such as sediment type, shallow geology, sediment mobility, fishing activity, shipping movements and anchor deployment along the route.
SN02	Relevant information will be communicated to other sea users via Notices to Mariners (NtM), Radio Navigation Warnings Navigational Telex (NAVTEX) and/or broadcast warnings.
SN03	All Project vessels will display appropriate marks and lights and will always broadcast their status on AIS.
SN04	Temporary aids to navigation will be used as required to guide vessels around areas of installation activity
SN05	A compass deviation report will be produced prior to installation
SN06	Guard vessel(s), using RADAR with Automatic RADAR Plotting Aid (ARPA) to monitor vessel activity and predict possible interactions, will be employed to work alongside the installation vessel(s) during cable installation works.
	Commercial Fisheries
CF01	A Fisheries Liaison Officer (FLO) and fisheries working group(s) will be maintained throughout installation to ensure project information is effectively disseminated, dialogue is maintained with the commercial fishing industry and access to home ports is maintained during the main fishing season.
CF02	Timings of any temporary areas of exclusion from fishing grounds will be clearly communicated via a notice to mariners.
CF03	Berms will be installed where cable protection is necessary. These will be designed with a 1:3 profile and flat crests, intended to prevent the risk of fishing gears snagging.
CF04	A procedure for the claim of loss of/or damage to fishing gear will be developed.

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	Other Sea Users
OSU01	Crossing and/or proximity agreements will be agreed with aggregate extraction, cable and pipeline owners. The crossing agreement describes the rights and responsibilities of the parties and also the design of the crossing. Crossing design will be in line with industry standards, using procedures and techniques agreed with the cable and pipeline owners.
OSU02	Timely and efficient communication will be given to sea users in the area via Notices to Mariners, Kingfisher Bulletins, Navigational Telex (NAVTEX and Navigational Areas (NAVAREA) warnings.

References

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Ref. 1.4.A.2 Wildlife and Countryside Act 1981 (as amended). [online] Available at: https://www.legislation.gov.uk/ukpga/1981/69.

Ref. 1.4.A.3 Health and Safety Executive (2015). Construction (Design and Management) Regulations 2015 (CDM). [online] Available at: https://www.hse.gov.uk/construction/cdm/2015/index.htm.

Ref. 1.4.A.4 The Waste (England and Wales) Regulations 2011 (as amended). [online] Available at: https://www.legislation.gov.uk/uksi/2011/988/contents/made.

Ref. 1.4.A.5 Department for Environment, Food & Rural Affairs and Environment Agency (2016). Waste: Duty of Care – A Code of Practice. [online] Available at: https://www.gov.uk/government/publications/waste-duty-of-care-code-of-practice.

Ref. 1.4.A.6 Hazardous Waste (England and Wales) Regulations 2005. [online] Available at: https://www.legislation.gov.uk/uksi/2005/894/contents/made.

Ref. 1.4.A.7 The List of Waste Regulations 2005. [online] Available at: https://www.legislation.gov.uk/uksi/2005/895/contents/made.

Ref. 1.4.A.8 International Cable Protection Committee (2023). ICPC Recommendations. [online] Available at: ICPC Recommendations (iscpc.org).

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com