The Great Grid Upgrade

Sea Link

Sea Link

Volume 7: Other Documents

Document 7.8: Red-Throated Diver Protocol

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Version History

Date	Version	Status	Description / Changes
March 2025	A	Final	For DCO submission
March 2026	B	Final	Issued to PINS Deadline 5
April 2026	C	Final	Issued to PINS Deadline 6
April 2026	D	Final	Issued to PINS Deadline 7
September 2026	E	Final	SoS Request for Further Information

Executive Summary

Ex1.1.1 This document addresses the potential impacts of the Sea Link Project (Proposed Project) on the red-throated diver, a species protected under the Outer Thames Estuary Special Protection Area (SPA). The Proposed Project aims to reinforce the transmission network in the South East and East Anglia to accommodate additional power flows from renewable and low carbon generation, as well as new interconnections with mainland Europe.

Ex1.1.2 The protocol's primary purpose is to provide best practice guidelines to minimize disturbance to non-breeding red-throated divers during the construction, operation, and decommissioning phases of the project. It highlights the sensitivity of the red-throated diver to anthropogenic disturbances and emphasizes the importance of adopting a final best-practice protocol as part of the Offshore Construction Environmental Management Plan (CEMP). The document also details the mitigation measures to be implemented, including careful planning of construction activities and vessel movements to avoid critical foraging areas within the Outer Thames Estuary SPA.

1. Red-Throated Diver Protocol

1.1 Introduction

1.1.1 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 and East Anglia. The Proposed Project is required to accommodate additional power flows generated from renewable and low carbon generation, as well as accommodating additional new interconnection with mainland Europe.

1.1.2 National Grid owns, builds and maintains the electricity transmission network in England and Wales. Under the Electricity Act 1989, National Grid holds a transmission licence under which it is required to develop and maintain an efficient, coordinated, and economic electricity transmission system.

1.1.3 This 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 400 kV overhead line close to Richborough in Kent.

1.1.4 National Grid is also required, under Section 38 of the Electricity Act 1989, to comply with the provisions of Schedule 9 of the Act. Schedule 9 requires licence holders, in the formulation of proposals to transmit electricity, to:

1.1.5 *Schedule 9(1)(a) '…have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest;' and*

1.1.6 *Schedule 9(1)(b) '…do what [it] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects'.*

1.1.7 The purpose of this document is to:

- Provide a mitigation protocol to be followed for minimising Proposed Project effects on red-throated diver.

1.2 The Proposed Project

1.2.1 The Proposed Project would comprise the following elements:

The Suffolk Onshore Scheme

- A connection from the existing transmission network via Friston Substation, including the substation itself. Friston Substation already has development consent as part of other third-party projects. If Friston Substation has already been constructed under another consent, only a connection into the substation would be constructed as part of the Proposed Project.

- A high voltage alternating current (HVAC) underground cable of approximately 1.9 km in length between the proposed Friston Substation and a proposed converter station (below).
- A 2 GW high voltage direct current (HVDC) converter station (including permanent access from the B1121 and a new bridge over the River Fromus) up to 26 m high plus external equipment (such as lightning protection, safety rails for maintenance works, ventilation equipment, aerials, similar small scale operational plant, or other roof treatment) near Saxmundham.
- A HVDC underground cable connection of approximately 10 km in length between the proposed converter station near Saxmundham, and a transition joint bay (TJB) approximately 900 m inshore from a landfall point (below) where the cable transitions from onshore to offshore technology.
- A landfall on the Suffolk coast (between Aldeburgh and Thorpeness).

The Offshore Scheme

- Approximately 122 km of subsea HVDC cable, running between the Suffolk landfall location (between Aldeburgh and Thorpeness), and the Kent landfall location at Pegwell Bay.

The Kent Onshore Scheme

- A landfall point on the Kent coast at Pegwell Bay.
- A TJB approximately 800 m inshore to transition from offshore HVDC cable to onshore HVDC cable, before continuing underground for approximately 1.7 km to a new converter station (below).
- A 2 GW HVDC converter station (including a new permanent access off the A256), up to 28 m high plus external equipment such as lightning protection, safety rails for maintenance works, ventilation equipment, aerials, and similar small scale operational plant near Minster. A new substation would be located immediately adjacent.
- Removal of approximately 2.2 km of existing HVAC overhead line, and installation of two sections of new HVAC overhead line, together totalling approximately 3.5 km, each connecting from the substation near Minster and the existing Richborough to Canterbury overhead line.

1.2.2 The Proposed Project also includes modifications to sections of existing overhead lines in Suffolk (only if Friston Substation is not built pursuant to another consent) and Kent, diversions of third-party assets, and land drainage from the construction and operational footprint. It also includes opportunities for environmental mitigation and compensation. The construction phase will involve various temporary construction activities including overhead line diversions, use of temporary towers or masts, working areas for construction equipment and machinery, site offices, parking spaces, storage, accesses, bellmouths, and haul roads, as well as watercourse crossings and the diversion of public rights of way (PROWs) and other ancillary operations.

1.3 Purpose of this Document

1.3.1 This document provides a best practice protocol to minimise the disturbance to non-breeding red-throated diver during the construction, operation and decommissioning of the Proposed Project. Red-throated diver is a feature of the Outer Thames Estuary SPA (Special Protection Area) and is considered sensitive to anthropogenic disturbance. A final best-practice protocol for minimising disturbance to red-throated divers during construction and operation will be adopted and will be provided as part of the Offshore Construction Environmental Management Plan (CEMP).

1.3.2 This is a working document and is subject being updated prior to the commencement of the construction phase for the Proposed Development, as the protocol develops.

1.4 Red-Throated Diver

1.4.1 The Offshore Scheme passes through the Outer Thames Estuary SPA in two locations for approximately 29 km. Firstly, as the Offshore Scheme leaves the Suffolk landfall and secondly, midway along the route of the Offshore Scheme at the outer reaches of the Thames Estuary. The Outer Thames Estuary SPA is designated, in part, for the protection of foraging areas for non-breeding red-throated diver. Red-throated diver typically arrive in UK coastal waters in September with numbers declining by February, although the main period of occurrence in coastal offshore waters is from October to March (O'Brien, Webb, Brewer, & Reid, 2012). They feed on a wide variety of fish, which they catch by diving from the surface and pursuing their prey underwater. The population of red-throated diver within the Outer Thames Estuary SPA is estimated at 22,280 ± 4293 individuals (± Standard Deviation (SD)), with a density of 5.68 individuals/km^2 (Natural England, 2019). This is an increase on the estimate of 6,466 individuals provided in 2010 (Natural England and JNCC, 2010).

1.4.2 Aerial surveys conducted by Natural England and HiDef in 2018 to assess population and distribution of red-throated diver in the Outer Thames Estuary SPA show that the species is present in high densities throughout much of the SPA including both shallower and deeper waters, with areas of lower density typically associated with the presence of wind farms in the southern North Sea, i.e., birds are displaced from the area of the wind farm array and immediate area surrounding the array (Natural England, 2019) (**Figure 6.4.4.5.6 Red throated diver counts (individuals) and densities (number km^2) in the Outer Thames Estuary SPA (see Application Document 6.4.4.5 (E) Environmental Statement Figures Marine Ornithology [REP5-032])**).

1.4.3 Red-throated diver is likely to be sporadically recorded along the entirety of the Offshore Scheme during the non-breeding season, with those areas intersecting the Outer Thames Estuary SPA likely to have higher numbers, as these areas have been shown to regularly support the species and represent important foraging areas.

1.5 Mitigation for Disturbance from Construction Activities and Vessels

1.5.1 The route for the Proposed Project intersects the Outer Thames Estuary SPA in two places, at the Suffolk landfall, and in offshore waters (**Figure 1 The Proposed Development and Outer Thames Estuary SPA**, within **Appendix A Figures**). Therefore, it is not possible to avoid vessels transiting through the site (see **Application Document 6.2.1.4 Part 1 Introduction Chapter 4 Description of the Proposed**

Project and **Application Document 6.2.4.5 Part 4 Marine Chapter 5 Marine Ornithology**).

1.5.2 The Proposed Project will require the use of several vessels in both offshore and shallow coastal waters within the Outer Thames Estuary SPA (Table 1.1). This will include the deployment of a Jack-Up Barge (JUB) for the construction of HDD exit points and cable lay vessels.

Table 1.1 Summary of installation vessels

Vessel	Description
Cable Lay Vessel (simultaneous cable lay and trenching)	Operational speed - 0.5 km to 5 km per day Transit speeds - 6 knots to 12 knots
Cable Lay Vessel (cable lay without simultaneous trenching)	Operational speed – 2 km to 7 km per day Transit speeds - 6 knots to 12 knots
Cable Barges	Operational speed - stationery Transit speeds - 4 knots to 10 knots
Trenching Vessels	Operational speed - 0.5 km to 5 km per day Transit speeds - 6 knots to 12 knots
Guard Vessels	Operational speed – 0 km to 7 km per day Transit speeds - 4 knots to 10 knots
Support Vessels	Operational speed - up to 7 km per day Transit speeds - 6 knots to 12 knots
Rock Placement Vessels	Operational speed - 0.5 km to 3 km per day Transit speeds - 6 knots to 12 knots

1.5.3 To reduce disturbance to red-throated diver, National Grid has committed to implementing a full seasonal restriction between 1st November – 31st March for offshore cable burial activities in the Outer Thames Estuary SPA and 2 km buffer around the SPA and a reduced seasonal restriction between 1st January – 31st March for landfall cable installation activities at the Suffolk Landfall in Aldeburgh. This will avoid construction and vessel presence during the sensitive wintering period of red-throated diver.

1.5.4 In line with mandatory requirements and best practice guidance, all vessels will be subjected to the following:

- All Project vessels shall adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention) (International Maritime Organisation (IMO), 2017).
- All Project vessels must comply with the International Regulations for Preventing Collisions at Sea (1972) (IMO, 1997), regulations relating to International Convention for the Prevention of Pollution from Ships (the MARPOL Convention 73/78) (IMO, 1983) with the aim of preventing and minimising pollution from ships and the International Convention for the Safety of Life at Sea (IMO, 1980).

- Designated (and as minimal as possible) anchoring areas and protocols shall be employed during marine operations to minimise physical disturbance of the seabed, thus reducing disturbance to prey species.
- All oil, fuel and chemical spills will be reported to the MMO Marine Pollution response team.
- There will be Health, Safety and Environment (HSE) procedures implemented, with strict limits on weather conditions, equipment maintenance and personnel to further reduce the risk of any accidental spills/releases. Furthermore, in the event of a spill, a response will be made swiftly.
- 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
  - if disposal is required drilling fluids would be transported by a licensed courier to a licensed waste disposal site.
- Vessel operators and crew will be made aware of the importance and sensitivity of the red-throated diver to disturbance.
- Vessels will avoid rafting birds and areas with high densities of birds where practicable.
- Artificial lighting on vessels will be directional and only used when necessary, noting that health and safety requirements will need to be met for safe working practices.
- Vessels will avoid over-revving of engines to minimise noise disturbance.
- Existing shipping lanes will be utilised for vessel transiting routes, along with maintaining direct transit routes, to avoid additional disturbance where practicable. A Vessel Management Plan will be developed post consent to identify vessel routes to avoid high density areas of red-throated diver.

1.5.5 Other relevant mitigation which will be implemented during the construction phase includes:

- 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 areas supporting protected species and habitats.
- Construction working will be undertaken within the agreed working hours set out within the Development Consent Order (DCO). Best practicable means to reduce construction noise will be set out within the Offshore Construction Environmental Management Plan (CEMP).

1.5.6 The CEMP will outline the best practice mitigation measures required to be implemented during construction (see **Application Document 7.5.2 Outline Offshore Construction Environmental Management Plan and Application Document 9.84 Register of Environmental Actions and Commitments (REAC)**). This would include measures to prevent accidental spillages from occurring and to minimise disturbance of sediments.

1.5.7 Although Sea Link falls entirely within English Waters, the following best practice guidance will be considered during cable installations:

- The Scottish Marine Wildlife Watching Code for advice, information and recommendations for watching marine wildlife (NatureScot, 2017a); and
- The Guide to Best Practice for Watching Marine Wildlife to reduce the disturbance of important marine species (NatureScot, 2017b).

1.5.8 During all operation and maintenance, and decommissioning activities, vessels will be required to follow the same best practice measures as during construction and set out in Sections 1.5.4 – 1.5.5.

1.5.9 The overall maintenance strategy will be finalised once the detailed design and technical specifications of the Offshore Scheme infrastructure are known. This section provides a description of the reasonably foreseeable planned and unplanned operation and maintenance activities for the Offshore Scheme.

1.5.10 The cable system installation is designed such that a regular maintenance regime is not required to maintain the integrity of the link. Remote systems such as DTAS (Digital Temperature and Acoustic Sensing) HVDC status monitoring via fibre optic cable (innovative in-situ monitoring of cable via near real-time temperature and acoustic monitoring which can inform of changes to the cable by intrusive contact as well as variations in depth of burial dependent on thermal changes on the baseline conditions) will be undertaken remotely over the project lifetime.

1.5.11 Further to DTAS monitoring where anomalies are identified, routine inspections may be required to observe and identify any potential changes to the as 'built status' of the cable. This may include visual (GVI), where visibility and sensors allow, bathymetric and depth of lowering (cable tracker) data to compare against the baseline survey data.

1.5.12 The monitoring surveys described above, and the land based DTAS monitoring may indicate that localised lengths along the cable link may require maintenance. This would normally be in areas of mobile sediment, such as scour or mobile bedforms migrating over the route, which alters the DOL of the cable. Maintenance may be the addition of mattresses, rock or grout bags, installation of remedial rock berms, additional trenching (where appropriate), or the removal of excess sand depth, as mobile bedforms migrate, resulting in excessive DOL. The latter would be undertaken using a Controlled Flow Excavator, or partial deburial methods (eductor).

1.5.13 Routine operational and maintenance activities will be planned so that they fall outside of the period 1 November – 31 March.

1.5.14 It should be noted that unplanned and time-critical 'emergency' repair work is not a routine operational and maintenance activity and does not form part of the Proposed Project. An emergency may mean a serious, unexpected, often dangerous situation requiring time-critical action[1]. Unlike routine operational and maintenance activities, including routine planned repairs, the scope of any damage or associated repair cannot be effectively anticipated in advance. An emergency is inherently unpredictable, is very improbable, and the Proposed Project is specifically designed to avoid such occurrences.

1.5.15 In addition to the duties of the Applicant as a Competent Authority, following any emergency operation and maintenance activities within the Outer Thames Estuary SPA

[1] Definition provided by the Marine Management Organisation

(and 2 km buffer) during the period of the 1 November – 31 March, a report would be provided to Natural England detailing the nature of the event and the specific location, duration and extent of works undertaken, including associated vessel transits and submitted to the MMO no more than four weeks post conclusion of the emergency works. The MMO, in consultation with Natural England, will provide confirmation in writing. The purpose of this report would be to provide a record of activities to help quantify potential impacts for future assessments of cumulative/in-combination effects for other similar projects.

1.5.16 Consultation will be undertaken with the MMO and Natural England as appropriate during this period to ensure the timely repair of any infrastructure whilst minimising disturbance to red-throated diver as far as practicable.

1.6 References

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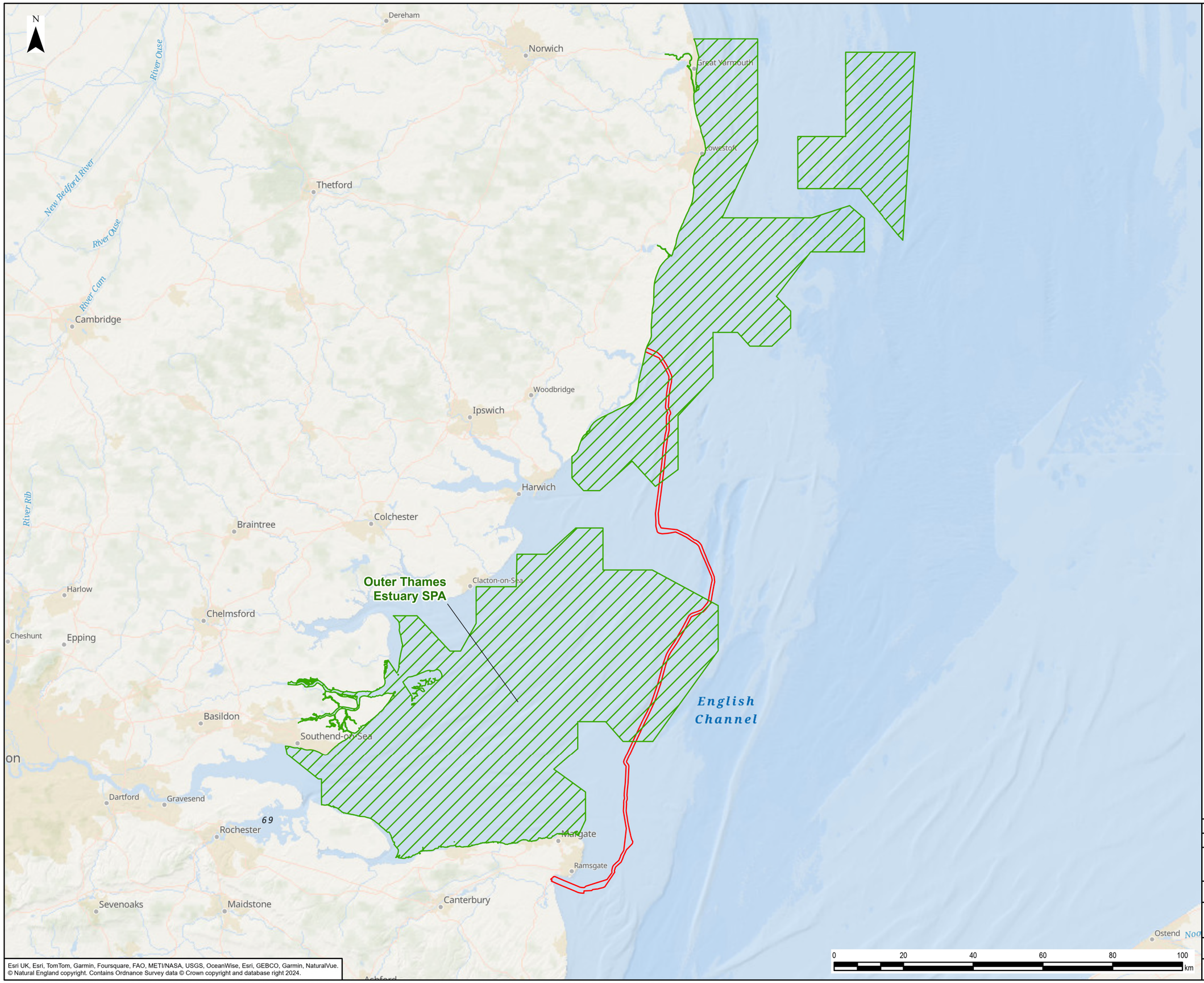
Appendix A Figures



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Legend

- Offshore Scheme Boundary
- Special Protection Area (SPA)

Rev	Date	Description	GIS	Chk	App
0	19/02/2025	ENVIRONMENTAL STATEMENT	EB	DF	AB

nationalgrid

Scheme: SEA LINK

Document Title: FIGURE 1
THE PROPOSED DEVELOPMENT AND OUTER THAMES ESTUARY SPA

Creator:	Date:	Checker:	Date:	Approver:	Date:
EB	19/02/2025	DF	19/02/2025	AB	19/02/2025

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FIGURE 1	1:1,000,000	A3	1	0

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