



The Great Grid Upgrade

Sea Link

Sea Link

Volume 6: Environmental Statement

Document: 6.3.2.4.A
Part 2 Suffolk
Chapter 4 Appendix 2.4.A
Water Environment Baseline Data

Planning Inspectorate Reference: EN020026

Version: A
March 2025

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009 Regulation 5(2)(a)

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1. Introduction

1.1 Overview

- 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 Southeast 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 The Proposed Project is proposed to reinforce the transmission system in the South East of England and East Anglia. 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.
- 1.1.3 This water environment baseline appendix has been produced to support the application for development consent and the accompanying Environmental Statement (ES) under the Planning Act 2008. This appendix supports **Chapter 6.2.2.4 Environmental Statement Part 2 Suffolk Chapter 4 Water Environment** and sets out the water environment baseline relevant to the Suffolk Onshore Scheme.

1.2 Structure of this Report

- 1.2.1 The structure of this report is summarized in Table 1.1.

Table 1.1 Structure of this report

Chapter	Content
1: Introduction	Introduction to the Proposed Project
2: Surface Water Discharges and Abstractions	This contains the data extracted from Groundsure Insight report GSIP-2022-12625-10112 (April 2022), on existing consented surface water discharges and existing surface water licensed abstractions.
3: Water Quality Data	This contains Environment Agency water quality records, including a summary of the location of the monitoring stations and data for the main rivers within the Order Limits of the Suffolk Onshore Scheme.

2. Surface Water Discharges and Abstractions

- 2.1.1 The surface water discharges and abstractions data presented in this appendix has been extracted from a Groundsure Insight report reference GSIP-2022-12625-10112 (April 2022).
- 2.1.2 The locations of the surface water discharges and abstractions are shown in **Application Document 2.11.1 Water Bodies in the River Basin Management Plan – Suffolk**.

2.2 Consented Discharges to Surface Waters

- 2.2.1 The data in Table 2.1 presents a summary of active consented discharges to surface waters within the Order Limits.

Table 2.1 Existing consented surface water discharges

Consent No.	Discharge Type	Receiving Watercourse	Volume (m ³)
PRENF20206	Sewage discharge, final and treated effluent (not water company)	Hundred River - tributary	Unspecified
PRENF16913	Trade discharges, process effluent (water company)	Hundred River	Unspecified

2.3 Licensed Surface Water Abstractions

- 2.3.1 The data in Table 2.2 presents a summary of active licensed surface water abstractions within the Order Limits of the Suffolk Onshore Scheme.

Table 2.2 Existing licensed surface water abstractions

License No.	Purpose/Use	Source	Licensed Quantity (Mega Litres – ML)
7/35/03/*S/0092/R01	Spray irrigation - storage	Hundred River at Aldringham	50,000

License No.	Purpose/Use	Source	Licensed Quantity (Mega Litres – ML)
7/35/05/*S/0044	Spray irrigation - direct	Drain at Friston (discharging to River Alde)	81,800
7/35/05/*S/0044	Spray irrigation - storage	Drain at Friston (discharging to River Alde)	81,800
AN/035/0005/004	Spray irrigation - storage	Drain at Friston (discharging to River Alde)	250,000

3. Water Quality Data

- 3.1.1 The water quality of the main rivers within the study area are monitored by the Environment Agency. Data has been collected from the Environment Agency Water Quality Archive (Environment Agency, 2022) and is summarised in Table 3.1 to Table 3.5. The monitoring locations are shown in **Application Document 2.11.1 Water Bodies in the River Basin Management Plan – Suffolk**.

Table 3.1 Monitoring station details

Station ID	Station Name	Location in relation to the Order Limits	Most Recent Data Available
AN-FRO030	River Fromus the Watering Snape	1.5 km southwest	April 2017 – June 2018
AN-FRO020	River Fromus Benhall Green Bridge	1 km west	July 2019 – March 2020
AN-THP020	Thorpeness Hundred River at Tidal Sluice	Within Order Limit	February 2020 – December 2021
AN-BENHALL	Benhall STW Final Effluent	1 km west	October 2023 – May 2024

Table 3.2 Water quality data summary - River Fromus the Watering Snape AN-FRO030

Determinand	Mean Value*	Published Quality Standard
pH	7.64	Typical range 6–9
Conductivity	1180	Typical range for freshwater 100–1,500 µs/cm
Biological Oxygen Demand	-	Water Framework Directive (WFD) high status** – 4 mg/l
Nitrate	16.62	50 mg/l for drinking water
Nitrite	0.11	1mg/l for drinking water
Ammoniacal nitrogen	0.00071	WFD high status – 0.3 mg/l
Orthophosphate	0.62	WFD high status – 0.05 mg/l
Dissolved Oxygen	85.8	WFD high status – 70%

*from the most recent 10 samples

**applicable to rivers at an altitude of less than 80 m and having an alkalinity (CaCO₃) of >200 mg/l

3.1.2 The data in Table 3.2 shows that Orthophosphate concentrations significantly exceed the concentration set for achieving WFD high status.

Table 3.3 Water quality data summary – River Fromus Benhall Green Bridge AN-FRO020

Determinand	Mean Value*	Published Quality Standard
pH	7.73	Typical range 6–9
Conductivity	938.6	Typical range for freshwater 100–1,500 µs/cm
Biological Oxygen Demand	< 1.63	Water Framework Directive (WFD) high status** – 4 mg/l
Nitrate	8.34	50 mg/l for drinking water
Nitrite	0.042	1 mg/l for drinking water
Ammoniacal nitrogen	0.00072	WFD high status – 0.3 mg/l
Orthophosphate	0.042	WFD high status – 0.05 mg/l
Dissolved Oxygen	65.97	WFD high status – 70%

*from the most recent 10 samples

**applicable to rivers at an altitude of less than 80 m and having an alkalinity (CaCO₃) of >200 mg/l

3.1.3 The data in Table 3.3 shows that dissolved oxygen is recorded at concentrations that are lower than the target for WFD high status.

Table 3.4 Water quality data summary – Thorpeness Hundred River at Tidal Sluice AN- THP020

Determinand	Mean Value*	Published Quality Standard
pH	7.63	Typical range 6–9
Conductivity	3081	Typical range for freshwater 100–1,500 µs/cm
Biological Oxygen Demand	< 3.74	Water Framework Directive (WFD) high status** – 4 mg/l
Nitrate	<1.70	50 mg/l for drinking water
Nitrite	<0.019	1 mg/l for drinking water
Ammoniacal nitrogen	0.00071	WFD high status – 0.3 mg/l

Determinand	Mean Value*	Published Quality Standard
Orthophosphate	0.15	WFD high status – 0.05 mg/l
Dissolved Oxygen	54.7	WFD high status – 70%

*from the most recent 10 samples

**applicable to rivers at an altitude of less than 80 m and having an alkalinity (CaCO₃) of >200 mg/l

3.1.4 The data in Table 3.4 shows that the majority of determinands are recorded at concentrations that meet with published quality standards. Conductivity exceeds the typical range set for a freshwater body, indicative of the tidal influence. Orthophosphate concentrations exceed the limit for High status, as does the % of dissolved oxygen recorded.

Table 3.5 Water quality data summary – Benhall STW Final Effluent AN-BENHALL

Determinand	Mean Value*	Published Quality Standard
pH	-	Typical range 6–9
Conductivity	-	Typical range for freshwater 100–1,500 µs/cm
Biological Oxygen Demand	7.38	Water Framework Directive (WFD) high status** – 4 mg/l
Nitrate	-	50 mg/l for drinking water
Nitrite	-	1 mg/l for drinking water
Ammoniacal nitrogen	1.39	WFD high status – 0.3 mg/l
Orthophosphate	-	WFD high status – 0.05 mg/l
Dissolved Oxygen	-	WFD high status – 70%

*from the most recent 10 samples

**applicable to rivers at an altitude of less than 80m and having an alkalinity (CaCO₃) of >200 mg/l

3.1.5 The data in Table 3.5 is largely incomplete as this monitoring location is a STW. Both available values are above the published quality standards.

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