



Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement:
Volume 2

Chapter 1: Introduction

May 2022

For: National Grid Electricity Transmission

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1. Introduction

1.1 General Introduction

National Grid Electricity Transmission (NGET) and Scottish and Southern Electricity Networks (SSEN) are jointly developing proposals for a subsea High Voltage Direct Current (HVDC) Link between Peterhead in Aberdeenshire and Drax in North Yorkshire, referred to as the Scotland England Green Link 2 (SEGL2), and herein referred to as the 'Project' (**Figure 1-1**). The HVDC reinforcement will allow the transfer of electricity between Scotland and England (and vice versa as required) via underground and subsea cables, connected to converter stations in each country which are in turn connected to the electricity transmission system via existing substations (**Figure 1-2**). NGET is responsible for consenting the offshore works in English waters and all onshore works in England.

NGET is submitting planning applications to East Riding of Yorkshire Council (ERYC) and Selby District Council (SDC) for the onshore elements of the Project in England referred to as the English Onshore Scheme (**Figure 1-3**). Further to the screening opinions provided by ERYC (21/00600/EIASCRC) and SDC (2021/0197/SCN) confirming that the English Onshore Scheme is 'EIA Development' under the Town and Country Planning (EIA) Regulations 2017 (2017 Regulations), this statutory Environmental Statement (ES) provides the information required by Regulation 18(3) and Regulation 18 (4) of the 2017 Regulations and any additional information specified in Schedule 4 which is relevant to the specific characteristics of the Project and to the environmental features likely to be affected.

The purpose of this ES is to support the planning applications for the English Onshore Scheme by describing the proposed development, documenting the assessment of its likely significant effects on the environment, and detailing the mitigation measures proposed to prevent, reduce or offset significant adverse effects.

The ES has been prepared in accordance with the 2017 Regulations.

1.2 The Project

1.2.1 Project Context

In response to the UK and Scottish Government's legally binding targets to reach net zero in their greenhouse gas emissions by 2050 and 2045 respectively, the way in which energy is generated is undergoing transformational change. Huge volumes of renewable energy generation as well as interconnectors will connect to the electricity transmission system over the coming years triggering a requirement to increase the capability of the electricity transmission system. As the volume of renewable energy connecting to the transmission system in Scotland continues to grow there is a need to increase cross-border transmission capability to ensure this energy is economically and efficiently transmitted from where it is generated to where it is needed. The requirement to increase cross-border transmission capability underpins the need for the Project.

For more information regarding background to and the need for the Project refer to **Chapter 2: Project Development and Alternatives**.

1.2.2 Project Overview

The Project is a major reinforcement of the electricity transmission system which will provide additional north-south transmission capacity across transmission network boundaries ensuring that green energy is transported from where it is produced to where it is needed.

The existing electricity distribution networks in England and Scotland both operate using predominantly High Voltage Alternating Current (HVAC). However, HVDC technology allows electricity to be transmitted from point to point in much larger volumes, over greater distances with fewer transmission losses compared to an equivalent HVAC system. The Project comprises both HVDC and HVAC technology as described from Scotland to England as described below and as shown on **Figure 1-1** and **Figure 1-2**:

- **Scottish Onshore Scheme:** A converter station at Peterhead in Aberdeenshire, Scotland which is connected to the new Peterhead Substation (currently under construction) by approximately 500 m of underground HVAC cables. From the converter station approximately 2 km of underground HVDC cable will be installed to a landfall at Sandford Bay;
- **Marine Scheme:** Approximately 436 km subsea HVDC cable from Sandford Bay on the east coast of Scotland to Fraisthorpe Beach in East Riding of Yorkshire, in the east of England. The Marine Scheme is being developed jointly by NGET and SSEN who will be submitting marine licence applications to the Marine Scotland Licensing Operations Team (MS-LOT) and the Marine Management Organisation (MMO). Whilst scoping advice confirmed that the Marine Scheme is not considered to be 'EIA Development', the licence applications will be supported by a non-statutory Environmental Appraisal Report; and
- **English Onshore Scheme:** Approximately 69 km of underground HVDC cable in East Riding of Yorkshire and North Yorkshire from the landfall at Fraisthorpe Beach to the proposed converter station close to the existing Drax Substation in Selby. The converter station will be connected to the existing substation by approximately 500 m of AC underground cable.

This ES is written with specific regard to the English Onshore Scheme component of the Project. Further information relating to the Scottish Onshore Scheme and Marine Scheme are set out in Environmental Reports submitted to Aberdeenshire Council and MS-LOT/MMO, respectively in support of the necessary consents and licenses associated with those components of the Project.

1.2.3 Project – English Onshore Scheme Overview

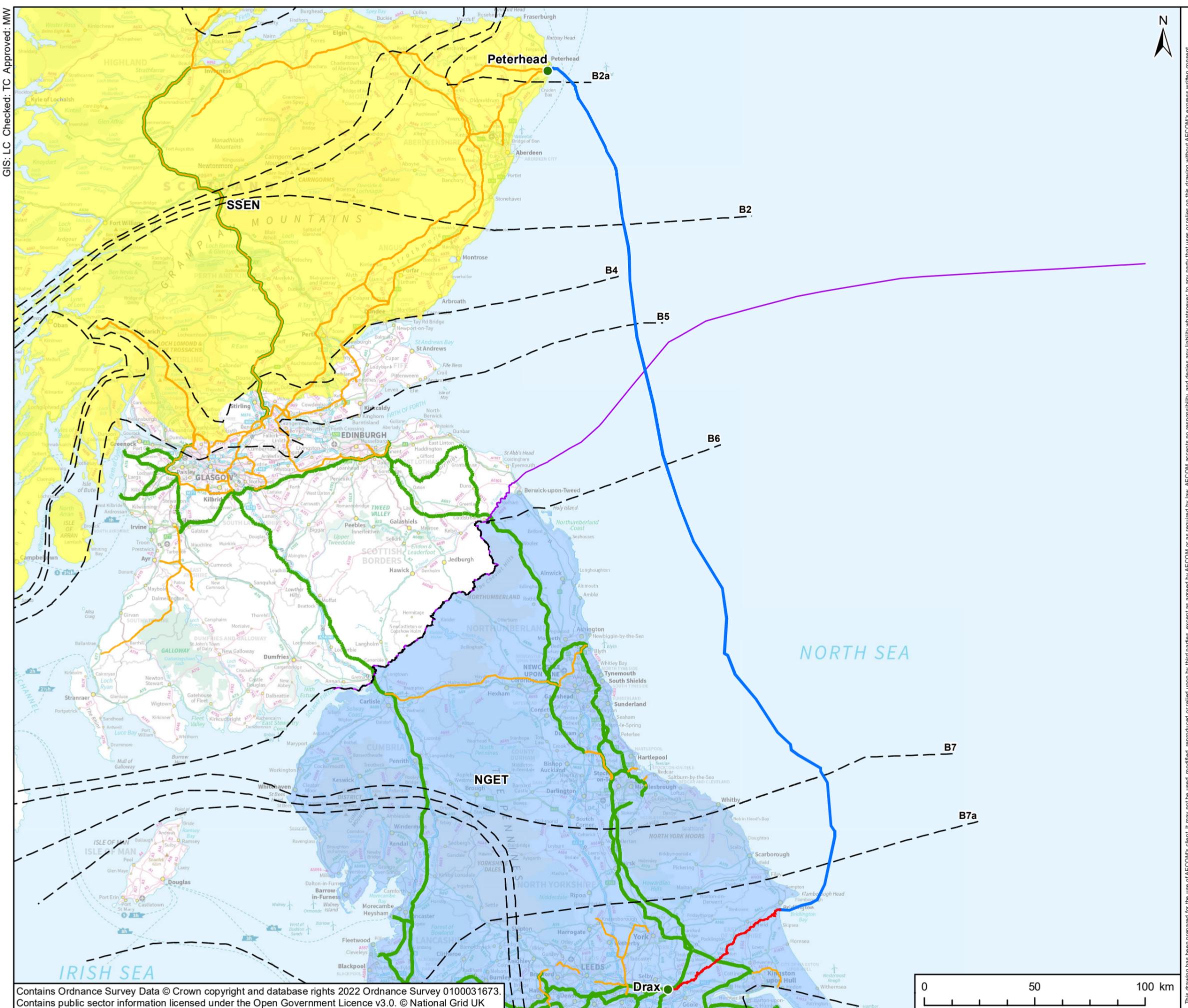
The English Onshore Scheme has been developed through a systematic process taking account of NGET's statutory and licence obligations. The general alignment of the English Onshore Scheme is identified in **Figure 1-3**. More information on the alternatives considered can be found in **Chapter 2: Project Development and Alternatives**.

The English Onshore Scheme comprises the following key components, as shown on **Figure 1-2** and detailed in **Chapter 3: Description of the English Onshore Scheme**:

- Transition Joint Pit (TJP) which will connect the offshore HVDC cables to the onshore cables, at a landfall located landward of the existing headland at Fraisthorpe, East Yorkshire;
- Approximately 69 km of two underground HVDC cables (and fibre optic cable(s) for performance monitoring) between the TJP and the proposed converter station immediately east of the existing Drax Power Station;
- New converter station buildings and outdoor electrical equipment together with formation of internal roads, erection of security fencing and provision of landscaping as well as the construction of a permanent access road from New Road;
- Approximately 500 m of six underground HVAC cables connecting the new converter station to the National Electrical Transmission System (NETS) via the existing Drax 400 kilovolt (kV) Substation; and
- Construction of associated temporary construction compounds, temporary work areas including drainage, and temporary vehicle access arrangements.

PROJECT
Scotland England Green Link 2

- KEY
- Planning Application Boundary - English Onshore Scheme
 - Marine Scheme
 - England/Scotland Border
 - Connection Point (Substation) Location
 - Network Transmission Boundary
- High Voltage Transmission System
- 275 kV
 - 400 kV
- Transmission Operator Boundary
- National Grid Electricity Transmission (NGET) Licence Area
 - Scottish and Southern Electricity Networks (SSEN) Licence Area

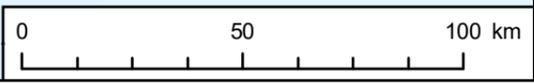


TITLE
**Figure 1-1
The Project**

REFERENCE
SEGL2_T_ES_1-1_v4_20220526

SHEET NUMBER
1 of 1

DATE
26/05/2022



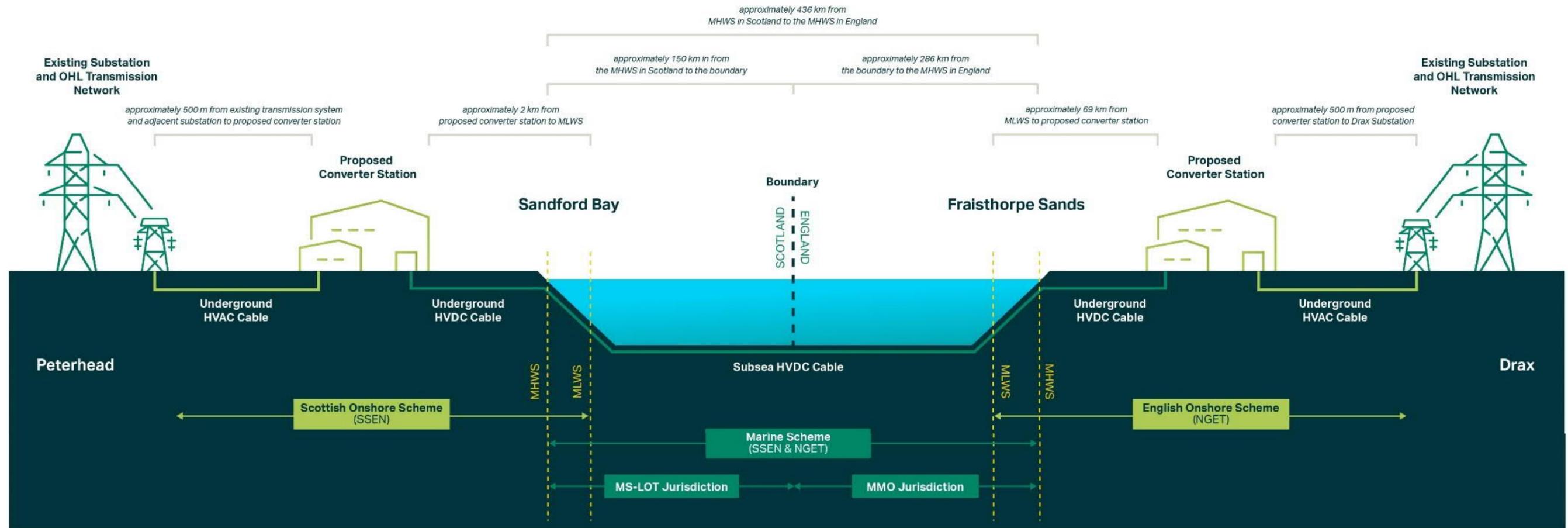
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Coordinate System: British National Grid

Scale @ A3 1:1,600,000

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Key:

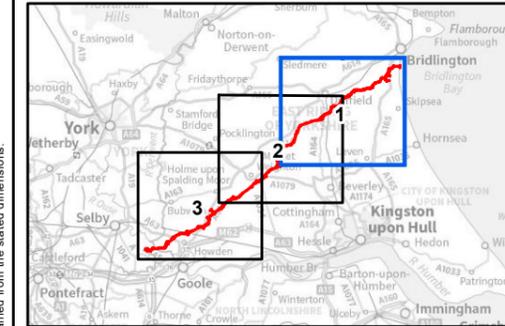
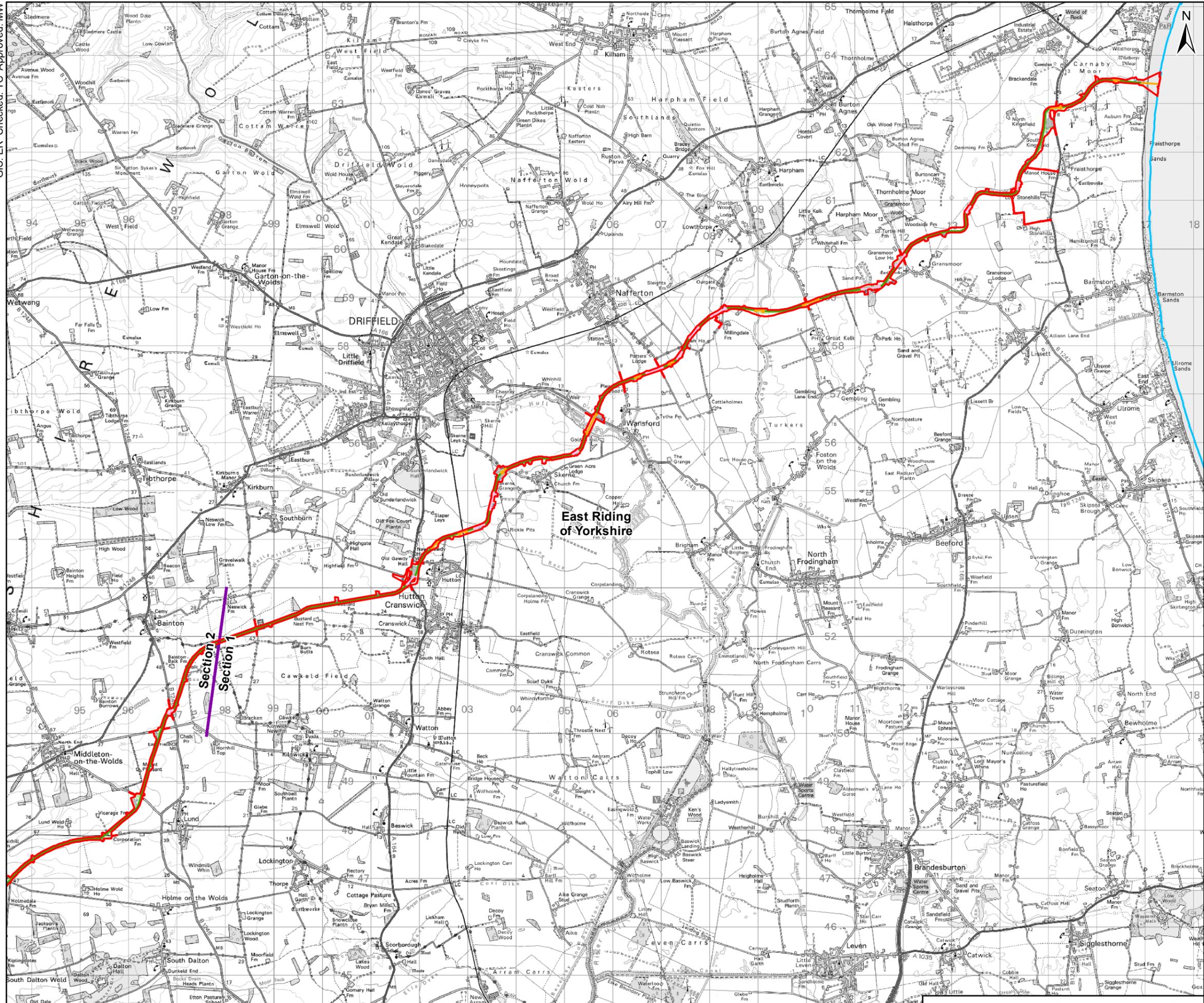
- | | | |
|--|---|---|
| HVDC - High Voltage Direct Current | MHWS - Mean High Water Springs | MS-LOT - Marine Scotland Licensing Operations Team |
| HVAC - High Voltage Alternating Current | MLWS - Mean Low Water Springs | NGET - National Grid Electricity Transmission |
| OHL - Overhead Line | MMO - Marine Management Organisation | SSEN - Scottish and Southern Energy Networks |

Figure is not to scale.

Figure 1-2: Overview of the SEGL2 HVDC transmission link

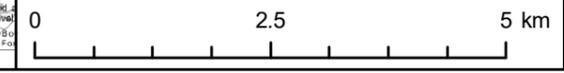
PROJECT
Scotland England Green Link 2

- KEY**
- Planning Application Boundary
 - Route Section Break
 - Mean Low Water Springs
 - HDD - Proposed
 - HDD - Unless Otherwise Agreed to be Open Cut
 - DC Cable Alignment – Open Cut
 - DC Cable Route Working Width (40m)
 - Temporary Attenuation Pond and Outfall
 - Temporary Construction Compound



TITLE
Figure 1-3
SEGL2 English Onshore Scheme

REFERENCE
SEGL2_T_ES_1-3_v3_20220526

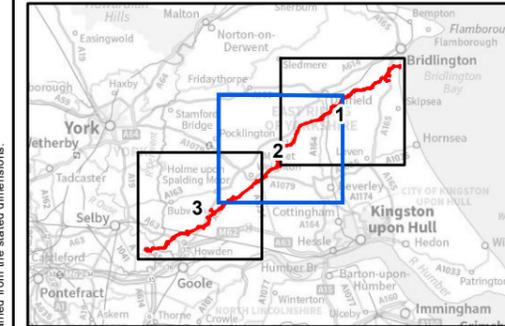
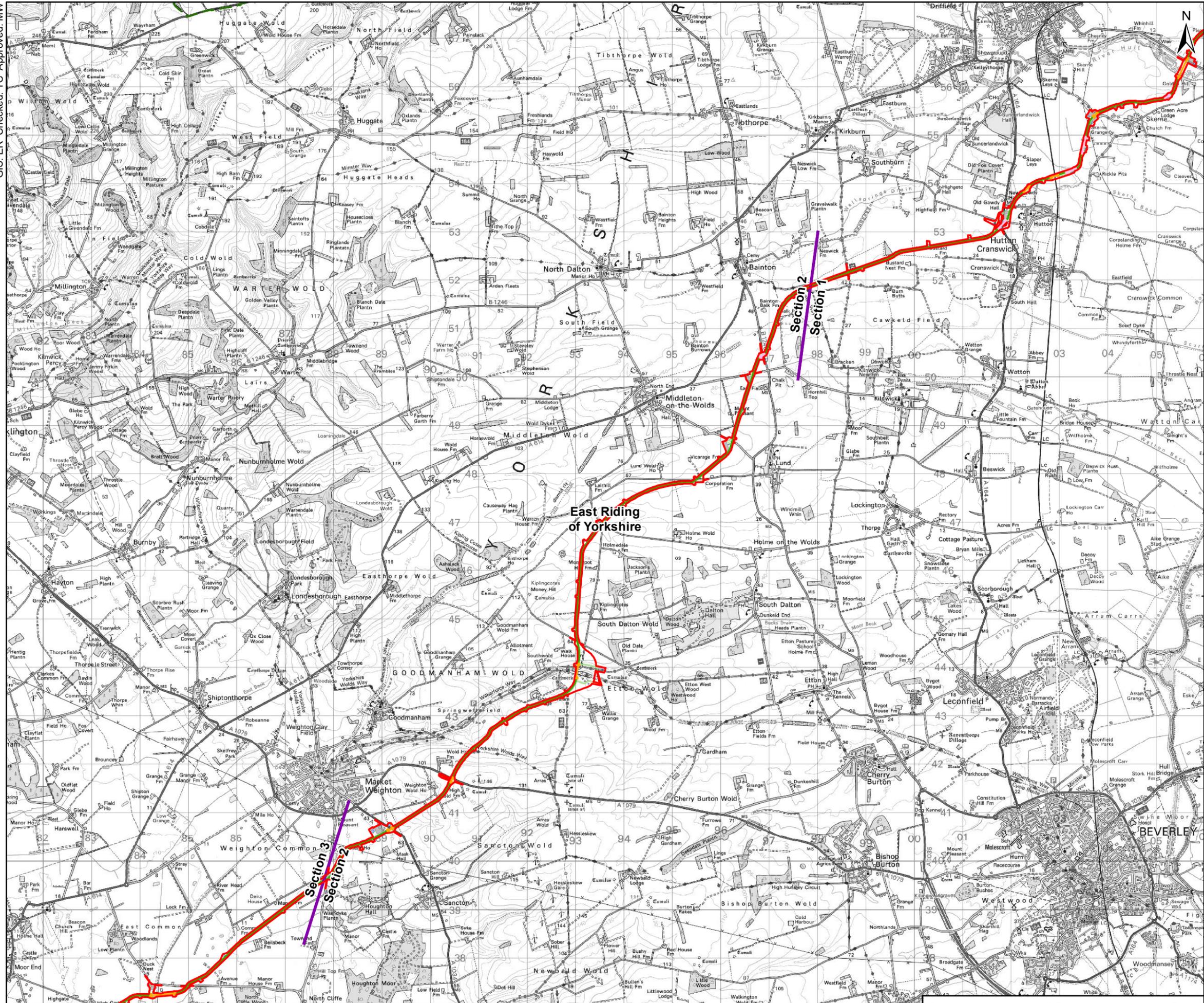


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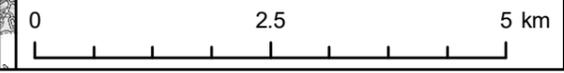
PROJECT
Scotland England Green Link 2

- KEY**
- Planning Application Boundary
 - Route Section Break
 - District Borough Unitary Boundary
 - HDD - Proposed
 - HDD - Unless Otherwise Agreed to be Open Cut
 - DC Cable Alignment – Open Cut
 - DC Cable Route Working Width (40m)
 - Temporary Attenuation Pond and Outfall
 - Temporary Construction Compound



TITLE
Figure 1-3
SEGL2 English Onshore Scheme

REFERENCE
SEGL2_T_ES_1-3_v3_20220526

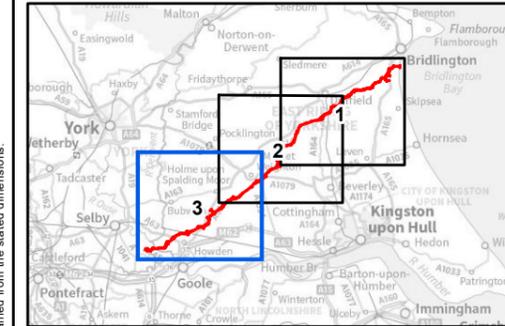
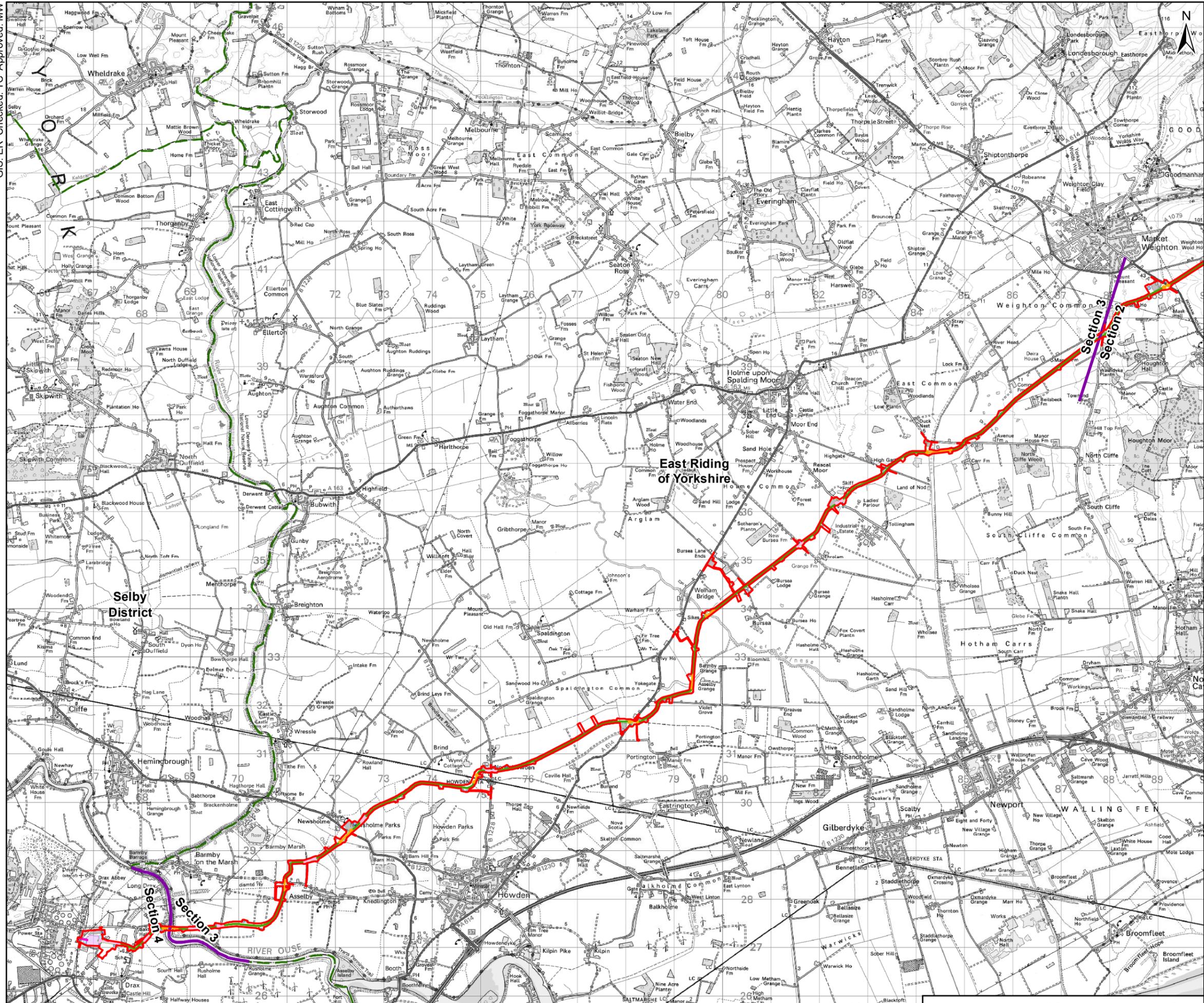


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PROJECT
Scotland England Green Link 2

- KEY
- Planning Application Boundary
 - Route Section Break
 - District Borough Unitary Boundary
 - HDD - Proposed
 - HDD - Unless Otherwise Agreed to be Open Cut
 - DC Cable Alignment – Open Cut
 - AC Cable Alignment
 - DC Cable Route Working Width (40m)
 - AC Cable Route Working Width (20m)
 - Temporary Attenuation Pond and Outfall
 - Temporary Construction Compound
 - Permanent Attenuation Pond
 - Converter Station Area



TITLE
**Figure 1-3
SEGL2 English Onshore Scheme**

REFERENCE
SEGL2_T_ES_1-3_v3_20220526

GIS: ER Checked: TC Approved: MW

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1.3 The Applicant

The Project is being jointly developed by NGET and SSEN; however, consents for the English Onshore Scheme are being sought by NGET. NGET and SSEN own the high-voltage electricity transmission network in England and Wales, and northern Scotland respectively. They are responsible for making sure electricity is transported safely and efficiently from where it is produced to where it is needed.

NGET and SSEN are transmission licence holders under the Electricity Act 1989 and have a number of statutory duties which includes the requirement “to develop and maintain an efficient, coordinated and economical system of electricity transmission” as well as specific responsibilities under Schedule 9 with regard to the preservation amenity.

1.4 The Consenting Team

The ES has been co-ordinated, prepared and reviewed by AECOM on behalf of the Applicant (NGET). AECOM is registered to the EIA Quality Mark, which is a scheme operated by the Institute of Environmental Management and Assessment (IEMA) that allows organisations (both developers and consultancies) that lead the co-ordination of statutory EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed.

Technical chapters have been completed by a combination of authors from AECOM, Capita, Wardell Armstrong and Mott MacDonald.

1.5 Approach to Consenting

Planning permission for the English Onshore Scheme is being sought under the Town and Country Planning Act (TCPA, 1990) (Ref 1-5). Due to the long linear nature of the English Onshore Scheme, it will span two Local Planning Authority (LPA) boundaries requiring applications for planning permission to be submitted to each relevant LPA for the elements of the English Onshore Scheme which fall within their administrative areas.

This ES covers all elements of the English Onshore Scheme and will be submitted in its entirety to each LPA for their decision regarding the elements relevant to that authority. Full planning permission will be sought from ERYC and a hybrid planning permission (comprising full planning permission for the underground cables and outline planning permission for the converter station) will be sought from SDC. The Project components and the applicable consents required are detailed in **Table 1-1**.

Table 1-1: English Onshore Scheme Consents and Land Considerations

Project Component	Primary Consent	Determining Authority
Approximately 67 km of underground HVDC cable from landfall to the LPA administrative boundary at the River Ouse, and associated temporary works	Full planning permission, Town and County Planning Act 1990 (TCPA)	ERYC
Approximately 2 km of underground HVDC cable from the LPA administrative boundary at the River Ouse to the proposed converter station, and associated temporary works	Full planning permission, TCPA	SDC
New converter station, 100 m long permanent access road, and all associated temporary works	Outline planning permission, all matters reserved, TCPA	SDC
Approximately 500 m of underground HVAC cable between the new converter station and the existing substation	Hybrid consents: <ul style="list-style-type: none"> Full planning permission, TCPA for underground HVAC cable component; and Outline planning permission, some matters reserved, TCPA for connection to new converter station component 	SDC

1.6 The Environmental Statement

The structure of the ES is set out in **Table 1-2** and comprises three volumes:

- **Volume 1: ES Non-Technical Summary.** This is intended to be readily accessible to the general public. It is concise and written in non-technical language providing a description of the English Onshore Scheme, a summary of the assessment of likely significant environmental effects and proposed mitigation measures;
- **Volume 2: Main ES Report.** This comprises the main text including a description of the English Onshore Scheme (including the alternatives considered), the baseline conditions, an assessment of the likely significant environmental effects resulting from the scheme, and proposed measures to mitigate those effects; and
- **Volume 3: ES Appendices.** This comprises the supporting technical information which are cross referenced throughout Volume 2.

Table 1-2: ES Structure

Chapter Number	Title
Volume 1 ES Non-Technical Summary	
Vol 1	Environmental Statement Non-Technical Summary
Volume 2 Main ES Report	
CH01	Introduction
CH02	Project Development and Alternatives
CH03	Description of the English Onshore Scheme
CH04	Planning Policy Context
CH05	Approach to Environmental Impact Assessment
CH06	Stakeholder Engagement
CH07	Ecology and Nature Conservation
CH08	Landscape and Visual Amenity
CH09	Archaeology and Cultural Heritage
CH10	Geology and Hydrogeology
CH11	Hydrology and Land Drainage
CH12	Agriculture and Soils
CH13	Noise and Vibration
CH14	Traffic and Transportation
CH15	Socio-Economics, Recreation and Tourism
CH16	Waste and Materials
CH17	Cumulative and In-Combination Effects
CH18	Outline Construction Environmental Management Plan
CH19	Summary and Conclusions
Volume 3 ES Appendices	
Vol 3	<p>Technical appendices follow the same structure as Volume 2, where appendices are included. This includes, but is not limited to:</p> <ul style="list-style-type: none"> • Habitats Regulations Assessment (Appendix 7F), • Geophysical and Metal Detector Survey Reports (Appendices 9D and 9E, respectively), • Flood Risk Assessment (Appendix 11B) and • Outline Soil Management Plan (Appendix 12B).

1.6.1 Other Supporting Documents

There are also a number of other documents which form part of the planning applications in addition to the ES, as detailed below in **Table 1-3**. The ES may cross refer to other documents within the planning application or vice versa.

Table 1-3: Supporting documents for the planning application

Document Title	Description
Planning Statement	Identified the context and need for the proposed development and includes an assessment of how the proposed development accords with relevant national, regional and local planning policies.
Design and Access Statement	A short report accompanying and supporting the planning application which explains the design principles and concepts that have been applied to the development and demonstrates how the developments context has influenced its design.
Outline Biodiversity Net Gain Strategy Report	Sets out the Biodiversity Net Gain (BNG) assessment report to detail the comparison between the biodiversity value of habitats present prior to development (i.e. the 'baseline') and the predicted biodiversity value of habitats following the completion of the development (i.e. 'post-development'); and the strategy proposed for the English Onshore Scheme to achieve a 10% BNG.
Planning Drawings	Sets out the location of the English Onshore Scheme and its various constituent components, including the permanent access for the proposed converter station, as per the drawing standard of the relevant Planning Authority validation requirements.

1.6.2 Availability of the ES

The ES will be submitted along with the other supporting planning application materials as described above. This will be available on the Public Access system available via both ERYC and SDC websites. Representations can be made via the Public Access systems, or in writing to the respective planning authority.

A hard copy of the ES is also available for public viewing in East Riding at:

- Beverley Customer Service - Beverley Customer Service Centre, 7 Cross Street, Beverley, East Riding of Yorkshire, HU17 9AX.

Electronic copies of the ES can also be downloaded from the project website at <https://www.nationalgrid.com/uk/electricity-transmission/network-and-infrastructure/segl2>

Further information about SEGL2 can be requested by contacting:

- Telephone: 0808 196 8405
- Email: info@SEGL2.nationalgrid.com, or
- By visiting the Project's website: <https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/segl2>
- An interactive map is also available which allows members of the public and consultees to review details of the English Onshore Scheme in greater detail. This can be accessed at the following link:
<https://aecomnatgrid.maps.arcgis.com/apps/webappviewer/index.html?id=60ce3079e75f4ecc91ad167bb1e89c87>

1.7 References

Ref 1-1 National Grid ESO (2021). July 2021 Future Energy Scenarios. Available at: <https://www.nationalgrideso.com/future-energy/future-energy-scenarios/fes-2021/documents>

Ref 1-2 UK Department for Business, Energy & Industrial Strategy (2020). Energy White Paper: Powering our Net Zero Future. Available at: <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>

Ref 1-3 Electricity Network Strategy Group (ENSG) (2009; updated 2012) Our Electricity Transmission Network: A vision for 2020. Available at: <https://www.gov.uk/government/publications/our-electricity-transmission-network-a-vision-for-2020>

Ref 1-4 National Grid ESO (2016). Network Options Assessment 2015/16. Available at: <https://www.nationalgrideso.com/document/90831/download>

Ref 1-5 HM Government (1990). Town and Country Planning Act. Available at: <https://www.legislation.gov.uk/ukpga/1990/8/contents>

