

ENGINEERING / PROJECT

**THE NATIONAL GRID ELECTRICITY TRANSMISSION PLC (SCOTLAND TO
ENGLAND GREEN LINK 1) COMPULSORY PURCHASE ORDER 2023**

SUMMARY OF EVIDENCE

**Graham Law
Lead EPC Project Manager
National Grid Electricity Transmission plc**

1. QUALIFICATIONS AND EXPERIENCE

1.1 My name is Graham Law and I am a Lead EPC Project Manager with National Grid Electricity Transmission Plc (NGET). I have a BEng (Hons) degree from the University of Newcastle upon Tyne in Electrical & Electronic Engineering, I am a Chartered Engineer and Member of the Institution of Engineering & Technology (MIET).

1.2 I set out my roles and qualifications in section 1 of my evidence.

2. INTRODUCTION AND SCOPE OF EVIDENCE

2.1 The purpose of my evidence is to explain the engineering design and construction methodology of the Scotland to England Green Link 1 (the **Project**), specifically from the converter station to the point of connection into the new electricity substation at Hawthorn Pit.

2.2 My evidence also addresses the wider need for and benefits of the Project, including the alternatives for the Project, and how the Project will be delivered and funded.

3. OVERVIEW OF THE PROJECT

3.1 NGET owns and maintains the high voltage electricity transmission network in England and Wales. In England and Wales, the high voltage electricity transmission system operates at 275,000 volts (275kV) and 400,000 volts (400kV), comprises some 7,000 route kilometres of overhead lines, over 600km of underground cable and over 320 substations.

3.2 NGET is the holder of an electricity transmission licence (the Transmission Licence) (**CD F.1**), granted pursuant to section 6(1)(b) of the Electricity Act 1989 (the **1989 Act**) (**CD A.7**).

3.3 I set out an overview of the Project in section 3 of my evidence.

4. NEED FOR THE PROJECT

4.1 The public benefit of the Project is set out at section 8 of the Statement of Case (**CD D.10**) and I detail the need for the Project in section 4 of my evidence.

4.2 The National Grid Electricity System Operator (**NGESO**) is the electricity system operator for Great Britain. NGESO annually reviews the network capabilities requirements which includes the following notable activities and publications: Future Energy Scenarios (**FES**); Electricity Ten Year Statement (**ETYS**); and Network Options Assessment (**NOA**). These are explained in my evidence.

4.3 The NOA process supports the Project and has identified the Project as a Holistic Network Design (**HND**) essential option, being a reinforcement that is essential to deliver the Pathway to 2030.

4.4 The primary objective of the Project is to reinforce the electricity network and increase transmission capacity across the B6 boundary between southern Scotland and northern England before 2030. The benefits of the Project are that it provides this reinforcement and provides resilience to the electricity network, addressing the current boundary constraints and transmitting renewable energy produced in Scotland to the English national electricity system.

4.5 The existing B6 boundary capacity is 6.3GW. The project will add an additional 2GW of capacity across the B6 boundary between southern Scotland and northern England.

- 4.6 NGET is obliged to seek the approval of the initial needs case and the final needs case for the Project from Ofgem under the regulatory regime.
- 4.7 Ofgem has approved the final needs case for the Project in the Eastern HVDC – Conditional Decision: Final Needs Case dated 8 July 2022 (the Ofgem FNC Decision) (**CD D.8**). The final needs case approval is conditional on, and subject to planning consents being obtained and agreement on the Project Assessment.
- 4.8 In the Ofgem FNC Decision, Ofgem confirmed that the Project is necessary and will deliver significant benefits for consumers.
- 4.9 The need for the Project, and the associated public benefits, is that it meets an identified urgent national need for new electricity transmission infrastructure. It meets the primary objective of boundary reinforcement.

5. PROJECT DELIVERY AND FUNDING

- 5.1 In my evidence I set out the expected approach to contract award and key project milestones.
- 5.2 In my evidence I set out the approach to funding through Ofgem and the regulatory regime. Funding under LOTI is only approved by Ofgem at the Project Assessment stage, which is designed to be aligned with the procurement process for each LOTI project. The Project Assessment is the final stage in which Ofgem sets the funding allowances for all construction activities to execute the Project.
- 5.3 In my evidence, I conclude that funding will be available by the time that the Order enables the exercise of powers of compulsory acquisition. This will be in place in respect of both construction costs and land compensation costs.
- 5.4 NGET has assessed the costs of implementing the Project and the costs of acquiring the necessary land and rights over land required for the Project.
- 5.5 Therefore, I consider that the criteria in paragraphs 13 and 14 of the CPO Guidance are satisfied.

6. ALTERNATIVES TO THE SCHEME

- 6.1 In section 6 of my evidence I address NGET's regulatory duties and statutory duties in the context of the considerations of alternatives to the English Onshore Scheme.

7. PHYSICAL COMPONENTS AND WORKS REQUIRED TO CONSTRUCT THE INFRASTRUCTURE

- 7.1 Section 7 of my evidence provides further detail on those components from the Converter Station to the Substation, including the HVAC Cables, New Access and Converter Station Compound.
- 7.2 The final design of the Converter Station is not yet known. Once appointed the Converter Station contractor will be responsible for developing the detailed design, including matters such as route alignment and micro-siting for the HVAC cable. The procurement process which will lead to the appointment of the contractor is ongoing. It is currently anticipated that contracts will be awarded in January 2024.

Construction Phase

Converter Station buildings and outdoor electrical equipment (together with formation of internal roads and erection of security fencing and provision of landscaping) Plot 7-28)

Physical Components

7.3 The Converter Station is located approximately 890m south-east of the existing Hawthorn Pit substation. The footprint of the Converter Station site is approximately 7 ha and is located on agricultural land, bound by Coop House Wood to the south and south-west, agricultural land to the west, and Jade Business Park to the north. The land to the north-east of the Converter Station is currently open land.

7.4 My evidence details at section 7 the infrastructure that will be located at the Converter Station.

Works required / construction methodology

7.5 I set out the works required and construction methodology for the Converter Station in my evidence.

Land and Rights needed

7.6 As the Converter Station comprises integral above ground infrastructure, freehold acquisition of Plot 7-28 is sought. I explain additional rights required in section 7 of my evidence.

Construction Compound for the Converter Station Site Plot 7-27

Physical Components

7.7 In order to facilitate construction of the Converter Station a construction compound is required. My evidence details the requirements of the Converter Station compound.

Works required / construction methodology

7.8 I set out the works required and construction methodology for the Construction Compound in my evidence.

Rights needed

7.9 A package of ‘Construction Compound Rights’ needs to be acquired over Plots 7-27 to enable the construction compound to be created, used and removed following completion of construction. The land will then be reinstated.

Operational Phase

Converter Station buildings and outdoor electrical equipment (together with formation of internal roads and erection of security fencing and provision of landscaping)

Physical Components

7.10 The Converter Station will be operated and maintained by a small team of NGET employees.

HVAC Cables

7.11 Buried HVDC cables do not normally require significant routine maintenance other than periodic route inspections.

8. OBJECTIONS MADE TO THE ORDER

8.1 No objections have been submitted in relation to the acquisition of the Converter Station, and no objections relates to the construction and operation of the Converter Station.

DCC Land – Alternative Construction Compound

8.2 In Section 8 of my evidence, I address DCC’s objection in respect of the Converter Station Compound.

9. SUMMARY AND CONCLUSION

9.1 In my statement of evidence I have described the physical components of the Project, namely the converter station and the HVAC cables, together with the works that are required to construct and/or install those physical components, with reference to the illustrative drawings and photographs embedded within it. I have also described the rights that are needed to enable those works to be undertaken safely.

9.2 I consider that the engineering design and construction methodology of the above elements of the Project is appropriate, feasible, and compliant with the relevant standards, codes, and guidance.

9.3 In my statement of evidence I have also set out the need for the Project, the primary objective of the Project and the funding position in respect of the Project. I conclude that there is an urgent need for the Project and that the English Onshore Scheme meets that need for the Project and achieves the primary objective.

9.4 No more land than is necessary for the purposes of the safe construction, operation and maintenance of the Project has been included in the Order (**CD D.1 and D.2**).

10. DECLARATION

10.1 I confirm that the opinions expressed in this proof of evidence are my true and professional opinions.

Graham Law

5 September 2023