# Core Document
# CD3.3

nationalgrid

**NGET/CD3.3**

**Public Local Inquiry into:**

The National Grid Electricity Transmission Plc (Pitsmoor-Wincobank-Templeborough 275 kV Cable Replacement Project) Compulsory Purchase Order 2023

The Electricity Act 1989 and The Acquisition of Land Act 1981

STATEMENT OF EVIDENCE PURSUANT TO RULE 15 OF THE COMPULSORY PURCHASE (INQUIRIES PROCEDURE) RULES 2007

of

Damian Spurr

BA Honours in Business Studies

On behalf of National Grid Energy Transmission PLC ("**NGET**")

**On matters relating to Funding and the Need for the Project**

**17 June 2024**

## CONTENTS

**Clause** **Page**

## 1. QUALIFICATIONS AND EXPERIENCE

1.1 My name is Damian Spurr, and I am a Senior Project Manager with National Grid Electricity Transmission Plc (NGET), specialising in project optioneering, development and project management of overhead power line replacement, HVDC Projects and Cable replacement Projects.

1.2 I have a degree in Business Studies and have worked in the electricity industry for over 33 years, working within various project management roles.

1.3 In my role with NGET, I am the Senior Project Manager accountable for the management for the development and ultimately the delivery of the Sheffield Cable Replacement Project ("the Project") leading a team of Lead Project Managers and Engineers responsible for the front-end engineering, Project design works, and early contractor engagement works that were carried out on the project since August 2023. My responsibilities associated with the early contractor engagement and Project design were separated out into several bespoke activities, that were carried out as part of the Project development works.

1.4 Prior to commencing works on the Project as the Senior Project Manager, I was the Lead Project Manager working on the Scotland to England Green Link 2 (SEGL2) HVDC project between Aberdeen (Scotland) and Drax (England) and the Scotland to England Green Link 1 (SEGL1), HVDC link project between Torness (Scotland) and Hawthorn Pit (England), both of which were being delivered by a separate joint venture consisting of National Grid, Scottish Power Networks and Scottish and Southern Energy Transmission. I was responsible for undertaking the optioneering and development works associated with the southern landfall and cable route covering an approximate length of 68km between the landfall and the connection into the transmission network. I worked on these complex and challenging projects during the period June 2018 to August 2023 prior to transitioning into my new role on the Project. Prior to June 2018 I was Lead Project Manager responsible for the development works associated with a visual impact provision Project (VIP) for NGET associated with the removal of 2km of OHL and replacing with a new cable solution.

1.5 I have over nine years of experience working for NGET in various project management and management roles, associated with optioneering, development and delivering complex and challenging projects associated within both transmission overhead line ("OHL") projects and cable replacement projects. I have a further twenty-three years of experience working for a contractor in the same electricity industry prior to commencing works for NGET, working in various project management and management roles associated with optioneering, development and delivering complex and challenging projects working primarily for NGET within the same OHL and cable industry.

## 2. SCOPE AND STRUCTURE OF EVIDENCE

### 2.1 The Project

2.2 The purpose of this statement of evidence is to explain what the Project is and why it is needed. Read together with the evidence of NGET's other witnesses, it demonstrates that the statutory requirements, 'need case' and the 'compelling case in the public interest' tests are met. In particular, this statement provides a full overview of the Need Case and Funding of the Project associated with the engineering development, challenges and methodologies related to the Project and provides supporting information relating to the reason for the Compulsory Purchase Order ("CPO").

2.3 This statement of evidence is structured as follows:

1.5.1 Section 2 Scope and structure of evidence.

1.5.2 Section 3 Overview of the Project.

1.5.3 Section 4 Alternatives for the Project.

1.5.4 Section 5 The Need for Project.

1.5.5 Section 6 Benefits of the Project.

1.5.6 Section 7 How the Project will be delivered and funded.

1.5.6 Section 8 Response to the Objections.

1.5.7 Section 9 Conclusions.

1.5.8 Section 10 Declaration.

2.4 My evidence does not address the Land Rights for the Project which is addressed by Neal Salomon in his evidence (CD3.1), or the engineering design and construction methodology in terms of cable design, route, or decommissioning, which is the responsibility of Dave Rogerson and is dealt with in his evidence (CD3.2). Engagement with non-engineering stakeholders, for example landowners, is also not covered within my evidence and shall be addressed by Neal Salomon. Planning matters are dealt with in the note prepared by Michelle Robinson (CD3.4). I have had regard to all of these statements, which I have seen in draft, in the preparation of my own evidence.

2.5 In respect of matters relating to human rights and equalities, these will be addressed in submissions, relying on the material included at Section 13 of NGET's Statement of Case (CD1.11).

## 3. OVERVIEW OF THE PROJECT

3.1 A detailed engineering description of the Project can be found in the Statement of Case and for ease of reference I have provided it in paragraphs 3.2 – 3.16 below. For the purpose of my evidence, it is important to properly describe and outline each part of the Project to fully understand the extent of the works, timeline and steps which need to be taken to replace this circuit in order to keep the network operational and supply to this area.

*3.2 NGET are proposing to replace the following cables (see figures 1.1 & 1.2), with the completion of the new circuits installed and energised by September 2026. The Pitsmoor-Temleborough circuit will be decommissioned from the network by March 2026.*

*3.2.1 Existing Templeborough – Wincobank (TEMP-WIBA B366) 3.5km.*

*3.2.2 Existing Pitsmoor – Templeborough (PITS-TEMP B367) 6.5km - being decommissioned.*

*3.2.3 Existing Pitsmoor – Wincobank (PITS-WIBA B368) 2.8km*

*They will be replaced with two new cross-linked polyethylene (XLPE) cable circuits:*

*3.2.4 New Templeborough – Wincobank (TEMP-WIBA B366) 3.0km*

*3.2.5 New Pitsmoor – Wincobank (PITS-WIBA B368) 3.1km.*

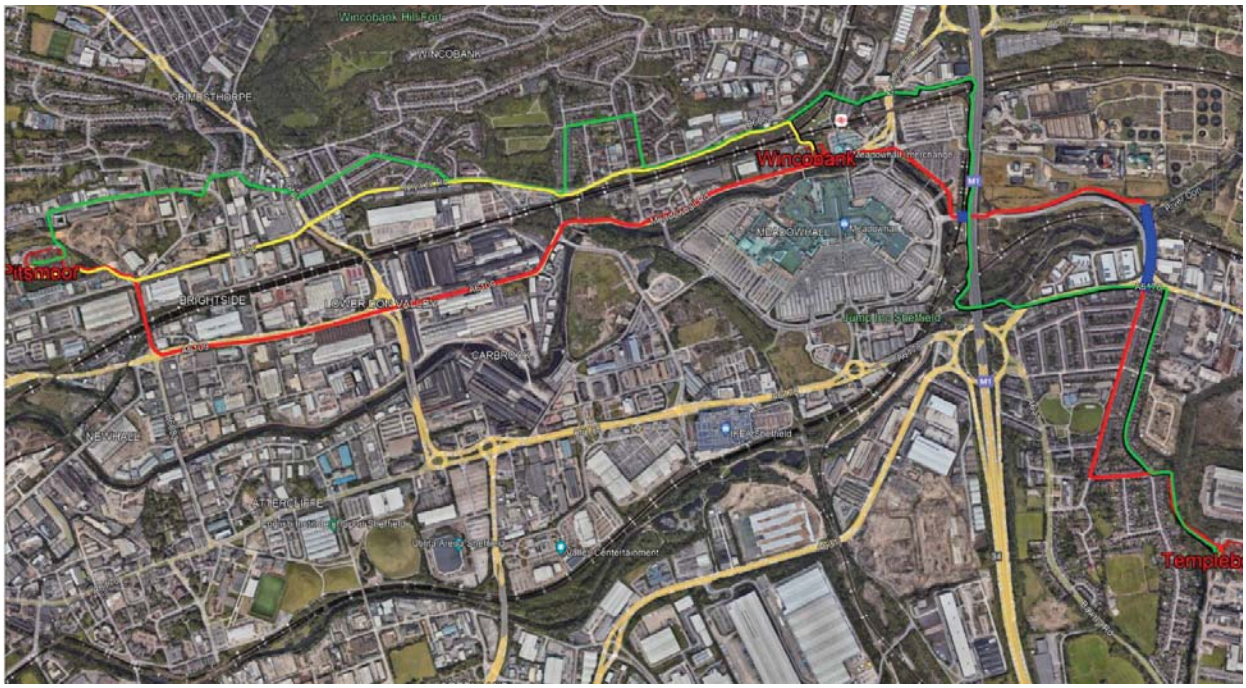

*Figure 1.1 Showing the existing and new cable circuits. Existing Templeborough – Wincobank (Black), Existing Pitsmoor – Templeborough (Green), Existing Pitsmoor – Wincobank (Yellow), New Templeborough – Wincobank (Red) and New Pitsmoor – Wincobank (Red).*

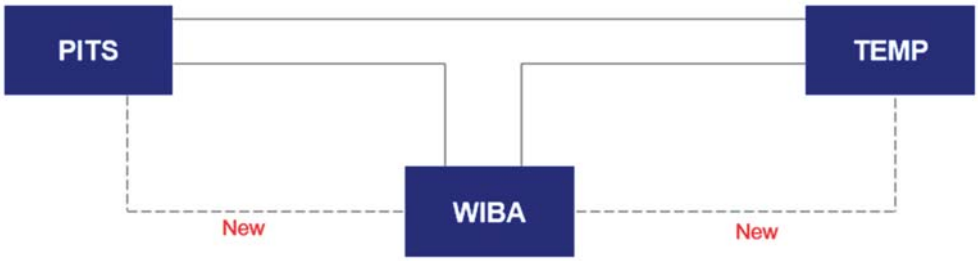


Figure 1.2 route schematic, showing existing and new ciurcuits.

3.3 *The Project is based entirely within the administrative boundaries of Sheffield City Council and Rotherham Metropolitan Borough Council (Councils) and extends from NGET's existing substation at Pitsmoor to the West via a substation at Wincobank and to a substation at Templeborough in the East. A description of the existing and proposed cable routes is provided below.*

*<u>Existing Cable Route – to be decommissioned.</u>*

3.4 *From Pitsmoor substation, both the Pitsmoor-Templeborough and Pitsmoor-Wincobank circuits are routed separately until they meet at the Holywell Road/Skelwith Road junction. They then separate again at the junction of Holywell Road/Limpsfield Road and meet again at the Tipton Street/Tyler Street junction before entering the railway embankment adjacent to Tyler Street and on to Wincobank Substation. The cable circuits are mainly direct-buried and run parallel with each other but in separate route formations.*

3.5 *The circuits run along the railway embankment, within above-surface concrete troughing, adjacent to one another. The Pitsmoor-Wincobank circuit then splits from the Pitsmoor-Templeborough circuit and heads down the embankment, under the railway and terminates in Wincobank Substation.*

3.6 *The Templeborough-Wincobank circuit follows the same route from Wincobank Substation under the railway and back up the embankment to the South on the other side of the railway. It then turns East to follow the same route as the Pitsmoor-Templeborough circuit. The cables then continue adjacent to each other in separate route formations onto a cable bridge that crosses over the River Don, following the footpath and then crossing the Tinsley Canal via a second cable bridge. From here they follow the route beneath Sheffield Road to join Ferrars Road. The cable circuits then run on separate sides of the road until they turn down a footpath opposite Highgate, crossing Chapel Flat Dike and through woodlands towards Templeborough Substation where they terminate at an overhead tower.*

*3.7 The Project scope is principally to replace two of the three existing circuits. These are from Pitsmoor to Wincobank, and Wincobank to Templeborough with Pitsmoor to Templeborough being decommissioned. The route is predominantly laid in highways, from Pitsmoor Substation, past Wincobank Substation up to where the circuit enters land near the Meadowhall Shopping Centre and the area in the vicinity of the Tinsley Viaduct. The circuit then heads South towards Blackburn Meadows Way, turns East running parallel with the road, until it reaches the River Don. It is proposed for the circuit to be routed under the river, joining back up with Blackburn Meadows Way before heading towards Sheffield Road. Once on Sheffield Road it will head south along Ferrars Road before turning East, beneath the Public Right of Way (Boston Path 23) to then turn South into the grounds of the Steelworks. From there the circuit will follow the conveyor area to Templeborough Substation.*

*3.8 The works in third party land are currently anticipated to start Mid-2025 with some early construction work due to commence in the adopted highways from Q2 2024 to accommodate the Councils' roadwork embargo periods including around the Meadowhall Shopping Centre at peak retail times.*

*3.9 The commissioning of the cables will commence post installation and NGET will test the cables from the substation to ensure they operate correctly prior to final commissioning and connecting to the system. Once the new cables are energised, NGET will begin the process of decommissioning the existing assets. This will involve the removal of cables in specific areas which have potential for safety or environmental issues. Any remaining cables will be purged of insulating oil and then capped with monitoring pits installed for future access in strategic locations to allow for further purging at later dates. Once complete, the ground will be reinstated.*

*3.10 NGET intends to install the new cable circuits using a combination of direct-buried and trenchless solution techniques at key strategic interfaces such as the tram crossing, the river crossing and at the junction of Blackburn Meadows Way and Sheffield Road, subject to detailed design works.*

*3.11 Most of the proposed construction works would be within or beneath the public highway, sections of the cable routes would cross third party land to connect into the existing fixed connection points on the network at existing substations. The construction works will be visible to the public but once the cable circuits have been installed and are operational, the intrusion upon the public and effects on private landowners will be minimal. Future operational maintenance access will be primarily focused on the joint bay locations for inspection and maintenance.*

*3.12 The Project will involve works within NGET's three current substations and these are set out in detail below, subject to detailed design. These works are required to update the existing substations to facilitate the new cables.*

*3.13 New Cable Sealing Ends (CSE) will be installed to replace the existing assets at Pitsmoor, Wincobank and Templeborough. These will be connected to existing infrastructure via busbar*

*connections. The installation of earth switches and post insulators will also be carried out at this site.*

*3.13.1 The existing tower (ZPT001) at Templeborough will be dismantled and the conductor removed during the decommissioning phase.*

*3.13.2 The high-level gantry at Templeborough substation will be dismantled and removed from site.*

*3.13.3 Oil tanks will be decommissioned and dismantled at Pitsmoor, Wincobank and Templeborough sites and then disposed of.*

3.14 The 3 x circuits are a crucial part of NGET's operational infrastructure and without the works, land acquisition authorised by the CPO and the described Project, the outcome would mean that there would be severe disruption to the localised network due to aging infrastructure which is in imminent need of replacement.

## 4. ALTERNATIVES FOR THE PROJECT

4.1 Do Nothing

4.2 The current cables are in a state of decline and a programme of replacement and renewal has been outlined in the evidence before the inquiry, in order to provide the necessary supply to the area. An assessment was undertaken in approx. 2019 and it was decided that replacement should take place imminently due to asset deterioration with potential for leakage or seepage into the environment.

4.3 Potential for Harm

4.4 Taking no action is not an option given the urgent and compelling need to replace the existing oil filled cables that were installed in the 1960's as they are now quickly reaching the end of their planned operational life. The existing cables are situated in close proximity to the River Don in a number of locations, with the proximity of the watercourses posing a potential significant environmental hazard due to the cables installed within cables bridges crossing over the River Don and the canal. The existing cables have suffered recent oil leaks, with several repair works carried out. Recent inspections of these circuits have identified further degradation to the sections of the cable sheath and continue to be at risk of leaks. NGET is required to fulfil its statutory duty and is seeking to avoid environmental harm.

4.5 Railway Embankment

4.6 It has been identified that some sections of the cable circuits to be replaced are also located within a railway embankment, located off Tyler Street, which is known to be affected by erosion and is unstable with significant risk of subsidence in these locations. NGET are seeking to avoid

any potential harm to other statutory undertakers assets if the cables were permitted to remain in situ and this forms a part of the compelling need to undertake the replacement works for the Project. We are currently engaging with Network Rail to offer them an asset protection agreement in order to undertake the proposed works and remove their objection.

4.7 Feasibility

4.8 An initial optioneering assessment was carried out (see Optioneering Report CD1.10) to establish the feasibility of cable route alignments between the National Grid substations, this exercise considered several factors including landscape and visual factors, designated sites for nature conservation, the historic environment, air quality, geology and topography, land use and soils, hydrology and flood risk, tourism and socio-economic factors, traffic and transport constraints, and the presence of existing infrastructure and services. This is in accordance with our statutory duties under the Electricity Act 1989 and our Electricity Transmissions Licence.

4.9 A similar exercise was also carried out during the feasibility stage of the Project to determine the technology options in relation to in-situ replacement of the existing cables and replacement of the existing cables with cross linked polyethylene ("XLPE") cables.

4.10 It was determined that the selected route was the most optimal for the cable replacement scheme and the land and rights identified were identified as necessary to undertake the Project.

4.11 The engineering works carried out to date have established the route alignment that has allowed for the construction access required for the cable installation works to be carried out whilst taking access from the public highway, where possible, for most of the route. NGET will only take land and rights that are strictly needed and have been identified in the CPO. Further, alternative routing strategy would mean more substantive land and rights acquisition in a less optimal alignment, due to increased cable length and the increased cost to deliver the project.

## 5. THE NEED FOR THE PROJECT

5.1 History of the circuit

5.2 The Need for the Project is driven by the asset health of the three existing oil-filled cable circuits which were commissioned in 1968. In some locations they are near watercourses, posing a significant environmental hazard. Cables installed on the cable bridges over the river and canal are prone to oil leaks having required several repairs in the past. Recent inspections of these circuits have identified further degradation to the sections of the cable sheath and continue to be at risk of leaks. NGET have existing rights along the route of the original cables and have sought to utilise their existing rights for the relaying of the cables. The CPO represents the land and rights which are necessary to relay the cables, maintain and improve transmissions for customers.

5.3 In addition, sections of all three cable circuits are located within a railway embankment, just off Tyler Street, which is known to be affected by erosion and is unstable with significant risk of subsidence. Therefore, NGET's cable is at risk of subsidence. Along this embankment the neighbouring distribution network operator, Northern Power Grid ("NPG"), cable troughs operated by NPG have already collapsed and have been decommissioned.

5.4 As a result of the present state of the land where the cables are currently installed, there is a risk that supply could be adversely affected, reduced, or even lost along the route unless the Project is allowed to go ahead. The new cable route will be installed primarily along Meadowhall Road to avoid the known area of subsidence in the vicinity of the railway embankment. This new route will mitigate further any future loss of supply associated with the cables that are currently installed in this area and increase the resilience of the circuits for future use once the new cable circuits are installed, commissioned and fully operational.

## 6. BENEFITS OF THE PROJECT.

6.1 The key benefits that will arise from the Project, which are in-line with the duties, policies, and guidance, are as detailed below:

6.1.1 Meeting energy demand and customer connection requirements.

(a) Demand could not be met due to the deterioration of the cables (as described above in regard to several repairs carried out to the cables and with recent inspections of these circuits having identified further degradation to the sections of the cable sheath) and it is necessary to undertake urgent works on an advanced programme to replace and relay the cables in order to meet customer demand. The works will also allow NGET to meet future customer need in this area.

6.1.2 Providing critical network reinforcement.

(a) Replacing and upgrading NGET's cables is a regular part of the transmission of energy by the undertaker. The works are required now and if the CPO is confirmed it will provide certainty of energy delivery as well as reinforcement of the wider network in this area, for many years to come.

(b) The engineering works carried out have established a preferred route alignment for the two new cable circuits, these routes follow a new offline route alignment for most of the route that can be installed whilst the existing circuits remain in service for most of the route. This preferred route alignment allows for the existing degrading cables to be left in service, with the new cable installed with a reduced outage period to allow the works to be carried out. This approach was taken to prevent lengthy outages and potential loss of supply whilst the extensive and new

cable installation works are carried out. This allows the outage periods to be reduced in length and also allows for other parts of the network to be worked on due to the reduced outage period required installing the majority of the route offline compared to installing the cables in the same location as the existing cables and the additional outage period to the network that would be required.

6.1.3 Transitioning to net zero/low carbon economy.

(a) There are engineering and energy efficiencies to be gained by the replacement of the old cables with new cables.

6.1.4 Energy security/reliability of supply.

(a) NGET are charged with delivering a safe and secure electricity transmission network. Replacement of the cables at this time will deliver energy security and certainty of supply. It will reduce the risk of intermittent interruption of supply.

6.1.5 Environmental Standards

(a) Undertaking the works in accordance with our project time frame will help to prevent any leakage or environmental harm due to the age of the deteriorated cables.

6.1.6 Environmental Value

(a) NGET's approach to enhancing environmental value, (including Biodiversity Net Gain) is to deliver a net gain by at least 10% or greater in environmental value (including biodiversity) on all construction projects (including those delivered by third parties and on land owned by NGET) and a commitment has been offered to Sheffield City Council ("the Council") for the purpose of match funding the National Heritage Lottery Fund. This will be secured by a legal agreement and provide an overall additional benefit to the area where the works are being carried out.

## 7. HOW THE PROJECT WILL BE DELIVERED AND FUNDED

7.1 Delivery

7.1.1 NGET is currently utilising an Early Contractor Involvement contracting strategy for development and undertaking of the initial construction works. The physical work commenced with early construction activities allowed by permitted development rights under the Town and Country Planning (General Permitted Development)(England) Order 2015 ("PD Rights") (CD4.8) and works permitted under the New Roads and Street

Works Act 1991 ("NRSWA Rights") (CD4.3). These works commenced in Q2 2024 and are currently ongoing.

7.1.2 The project shall be delivered in three phases, the phases are split by circuit and are as follows;

(a) Pitsmoor to Wincobank Cable Replacement Works. These works involve the installation of new ducting followed by the installation of new 275kV cable, joint bays and ancillary equipment required to be installed to control and monitor the cables

(b) Wincobank to Templeborough Cable Replacement Works. These works involve the installation of new ducting followed by the installation of new 275kV cable, joint bays and ancillary equipment.

(c) Decommissioning Works for Pitsmoor to Wincobank, WIncobank to Templeborough and Pitsmoor to Templeborough. These works involve the removal of certain sections of redundant equipment along with the removal of two cable bridges crossing watercourses.

7.2 Timetable for Delivery

7.2.1 Cable containment system works in the highways using PD Rights and/or NRSWA Rights will begin in Q4 2024 and run until the end of Q1 2027. The timings of the works in highways will be subject to embargo periods imposed by the Council.

7.2.2 Subject to the CPO process NGET anticipates that access to the land in the Order will be required from Q2 2025. Further containment work in these areas will take an estimated period of 6 months to complete. Further, NGET intends to begin trenchless solution crossings in Q2 2025 (subject to detailed design works). NGET has made the Order to ensure that it can deliver the Project in line with these timeframes.

7.2.3 NGET's intention is for the cables to be operational by Q3 2026 for Circuit 3 with the decommissioning and demobilisation works to follow until Q1 2027

7.3 Funding

7.4 NGET have acquired sufficient funding to deliver the Project and can confirm that there is no financial impediment to implementing the scheme. Funding relates to the acquisition of land as well as project costs for the works and is more fully described below.

7.5 In 2019, the Office of Gas and Electricity Markets (Ofgem) set out the framework for the price controls in their Sector Specific Methodology Decisions. In December 2019, National Grid Electricity Transmission (NGET) and National Grid Electricity System Operator (NGESO)

submitted their business plans to Ofgem setting out proposed expenditure for the Ofgem's regulatory framework is known as RIIO (Revenue = Incentives + Innovation + Outputs) ). The RIIO model offers network companies incentives for innovation and securing investment, so they can develop sustainable energy networks at the lowest cost for current and future customers. For RIIO-2, these plans were assessed, together with engagement of a wide range of stakeholders, the results were published via Draft Determinations in July 2020.

7.5.1 Based on that review and further engagement on the Draft Determinations, Ofgem set out their Final Determinations for company allowances under the RIIO-2 price control, which commenced on 1 April 2021. As a result of its Final Determinations, Ofgem has allowed funding for the Project and based upon this allowance NGET has continued to develop the Project works - covering engineering requirements, customer co-ordination and landowner and stakeholder consultation.

7.5.2 In September 2023 NGET also sanctioned this funding internally to allow the continuation of the Project works in line with the RIIO-2 Final Determination output. The current funding position allows the project to both acquire the land/rights and to deliver the project based on the established route alignment. The Project is progressing an early contract engagement strategy with a main works contractor and is currently carrying out a cost and programme assessment to determine the costs associated with the delivery of the cable replacement works,

7.6 No objector to the Order has suggested that NGET will not have the necessary resources or capacity to fund and deliver the Project.

## 8. RESPONSE TO OBJECTIONS

8.1 The relevant deadline for submission of objections to the Order was 05 January 2024. Nine objections were received by that date.

8.2 None of the objectors have submitted an objection to the principle of the proposed cable replacement and NGET does not consider any of the issues raised to be insurmountable. NGET is working with the objectors to better understand their specific concerns and explore opportunities to remove or mitigate these concerns. I have been responsible for liaising internally with the lands and engineering teams and subsequently with the lands team liaising with all objectors in order try to achieve this.

8.3 Section 8 of the evidence of Neal Solomon outlines the objections remaining at the time of writing, NGET’s response to them and the status of negotiations.

8.4 The CPO land and rights acquisition route has been proposed and widely consulted upon by statutory undertakers and non-statutory consultees and it has been agreed by NGET as optimal considering the original circuit route, aging third party assets, subsidence issues on Network Rail

land and aging cable bridges. NGET are continuing to share detailed engineering plans with those who have objected to the Project and offer interface and protected provisions agreements to provide reassurance to those parties.

## 9. SUMMARY AND CONCLUSIONS

9.1 There is an obvious and urgent need for the project due to the imminent deterioration of the existing cables. It is not possible to 'do nothing' and additional land and rights are sought by NGET in the CPO to allow them to replace the cables in the most efficient manner possible. NGET will need to maintain supply to existing customers, accommodate new connections whilst reinforcing the network in the medium to long term and maintaining its assets.

9.2 I consider that this is evident in the early contractor engagement works, and Project design associated with the cable route, which is appropriate and feasible. This can be seen in the level of works carried out from the completion of the initial FEED specification, completion of the initial and detailed engineering optioneering works to the more recent early contractor engagement works and the preparation of the drone survey that detailed the route's complexities and challenges, associated with the numerous utilities, highways and other third party assets that will need to be negotiated during the cable installation works and the extensive works carried out to establish the route orientation and proposed alignment as part of the initial Project design works.

9.3 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.

9.4 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 Project meets that need for the Project and achieves the primary objective.

9.5 On the basis of my evidence, and the other evidence presented to the Inquiry on behalf of NGET, I respectfully ask the Inspector to recommend to the Secretary of State that the CPO for the Project be confirmed in this case.

## 10. DECLARATION

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

Signed DocuSigned by: Damian Spurr 552E82B2E01B46F... .....

Dated 18-06-2024 .....