



Technical Appendix 6 – Preliminary Construction Traffic Management Plan

Colehill 110kV Substation and Grid Route

11/12/2025



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INTRODUCTION

Background

- 6.1. Neo Environmental Ltd has been appointed by Renewable Energy Systems on behalf of Ballyteige Solar Limited (the “Applicant”) to undertake a Preliminary Construction Traffic Management Plan (PCTMP) (for a Strategic Infrastructure Development (“SID”) Application for a new 110kV Substation (“Colehill 110kV Substation”) and grid connection to the existing Thornsberry 110kV substation.

Development Description

- 6.2. “The Proposed Development” comprises of a 110kV substation, access road, interconnection cables and grid route. The Proposed Development is to facilitate the connection of Ballyteige (PA Ref: 2198) and Derrygrogan (PA Ref: 22378 and ABP 318041-23) solar farms to the national grid. The method of connection to the national grid for the new substation will be a 110kV tail-fed connection into the existing Thornsberry Substation.
- 6.3. The Proposed Development will consist of:
- 1No. substation compound comprising of No.3 work areas with CCTV and associated drainage which will be enclosed by 2.6m high palisade fencing and gates:
 - 1No. Eirgrid control building, 110kV bay arrangements, 4No. lightning poles, compound road,
 - Crane hardstand, 2No. transformers and 2. No auxiliary transformers, 110kV electrical equipment, back up generator,
 - 2No. Independent Power Purchaser (IPP) control buildings and compound including toilet, 2No. grid code compliance equipment, 2No. harmonic filters, car parking and telecoms pole),
 - Property boundary fencing;
 - Access tracks (upgraded existing and new);
 - Temporary construction compound and temporary access track,
 - Temporary and permanent road re-alignment of a section of O of Wood local road;
 - c.7.5km of underground 110kV cabling with joint bays, over and under watercourse crossing and a potential horizontal directional drill on access track and local roads;

- c.610m of medium voltage underground interconnection cable with associated horizontal directional drill.
- All associated and ancillary site development, excavation, construction, landscaping and reinstatement works and the provision of site drainage.

6.4. Please see **Figure 103** in **Volume 2** for a layout of the Proposed Development.

Site Description

- 6.5. The Proposed Development is situated within the townlands of Ballyteige Little, Wood of O, Corndarragh, Derrynagall or Ballydaly, Ardan and Puttaghan, Co. Offaly.
- 6.6. The Colehill 110kV Substation is proposed to be located in one relatively flat agriculture field. The proposed 7.5km grid route will run in a northeast direction from the proposed Colehill 110kV substation to the existing ESB Thornsberry 110kV substation via private land and local roads. Interconnection cables from the eastern sections of Derrygrogan Solar Farm will be installed via horizontal directional drilling on a section of an agricultural field underneath the dry canal into the proposed access and track of Colehill 110kV Substation.
- 6.7. The Proposed Development lies at an elevation of c. 71.7 to 77.8m AOD and covers a total area of c. 11.2 hectares. The approximate Irish Grid Reference points (ITM) of the proposed Colehill 110kV substation are X 639234 and Y 727175. Access to the proposed substation will be from the Wood of O Road to the east of the Substation “Proposed Substation Site” which is the same entrance point for the consented Ballyteige Solar Farm (PA Ref: 2198).
- 6.8. The grid route and substation boundaries are approximately 250m and 5.8km northeast from Tullamore Town.

Scope of the Assessment

- 6.9. The aim of a PCTMP is to put in place procedures to manage grid connection and interconnection construction traffic effectively. It will outline measures to enhance the efficient transportation of construction materials and machinery whilst minimising delay and disruption to general traffic.
- 6.10. This PCTMP will provide details of:
- The grid cable and interconnection cable routes identification and assessment;
 - Construction Traffic Management Plan; and
 - Typical details to be included in the final CTMP.
- 6.11. This report is supported by the following appendices:

- Appendix 6A: Figures
 - Figure 6.1: Traffic Management General Arrangement Up to 60km/h
 - Figure 6.2: Traffic Management General Arrangement Up to 100km/h
- Appendix 6B: Standard Specification for ESB 110kV Network Ducting
- Appendix 6C: SSWP - Working on Roads
- Appendix 6D: Outline Construction Methodology (Tli Group)

Statement of Authority

- 6.12. This Construction Traffic Management Plan has been produced by Michael McGhee and Tom Saddington of Neo Environmental. Having completed a civil engineering degree in 2012, Michael has worked on over 1GW of solar farm Construction Traffic Management Plans across the UK and Ireland, as well as more detailed transport statements for major developments.
- 6.13. Tom has an undergraduate degree in Bioengineering and graduated with an MSc in Environmental and Energy Engineering in January 2020. He has been working on various technical assessments for numerous solar farms in Ireland and the UK.

GRID ROUTE IDENTIFICATION AND WORKS DESCRIPTION

- 6.14. This delivery route and subsequent PCTMP is based upon information provided by the Applicant as well as a thorough review of the local and national roads in the vicinity of the Proposed Development.

Grid Connection Route

- 6.15. The proposed cable route will run from the proposed Colehill 110kV Substation to the existing Thornsberry 110kV substation. From the proposed Colehill 110kv Substation, the trench will travel for 240m to the entrance of the Ballytiege solar farm within private land and from here will be constructed within the Wood of O carriageway for 929m before its junction with the L1025. The trench will then follow the L1025 in a western direction for approximately 4750m before it meets the junction with the L1024. The trench will then turn north along the L1024 for approximately 1,203m before it meets the entrance of the Thornsberry 110kV substation. From here the trench will run for 300m along ESB owned land where it ends at the Thornsberry 110kV substation (which is not part of this planning application).

Construction Works

- 6.16. The following activities will be undertaken during the construction phase:

Trenching Methodology

- The Contractor, and their appointed Site Manager, will prepare a targeted Method Statement concisely outlining the construction methodology and incorporating all mitigation and control measures included within the Planning Application and accompanying reports;
- All existing underground services shall be identified on site prior to the commencement of construction works;
- The proposed grid connection is circa 7.5km in length (with the majority on public roads) and is to be installed along private agricultural land, public roads, and ESB owned land. The last section of the grid route within the ESB owned land will be part of section 5.
- The excavated trench will be approximately 825mm in width and approximately 1315mm deep.

- The base of the excavated trench will be lined with Cement Bound Granular Mixture B (CBGM B). The UGC will consist of 3 No. 160mm diameter HDPE power cable ducts, 2 No. 125mm diameter HDPE communications duct and 1 no. 125mm diameter earth continuity duct. It is anticipated that this work along the public road will be carried out on the carriageway apart from the joint bays which will be situated within the verge and public road;
- At watercourse crossings, the contractor will be required to adhere to the proposed typical culvert undercrossing drawing (051064-DR-117 P3), typical culvert overcrossing (051064-DR-118 P2) and environmental control measures outlined within the Planning Application and accompanying reports, the detailed Construction Environmental Management Plan (CEMP) to be prepared prior to the commencement of construction, and best practice construction methodologies;
- Where the cable route or cable interconnection intersects any small culverts, bridges or dry canals, the culvert, bridges or dry canals will remain in place and the ducting will be installed above/below it and provide minimum separation distances in accordance with ESB/ Eirgrid, Irish Water and Waterways Ireland specifications;
- The proposed development does not involve the draining or modifying of any of the minor or major tributary watercourses;
- No installation will take place during extreme weather warnings. No construction personnel, operation or maintenance personnel will be permitted to carry out any works during extreme flood events;
- No more than a 100m section of trench will be opened at any one time. The second 100m section will only be excavated once the majority of reinstatement has been completed on the first;
- The excavation, installation and reinstatement process will take an average of one day to complete a 100m section;
- Following the installation of ducting, pulling the cable will take approximately one day between each joint bay; and
- Where required, grass will be reinstated by either seeding or by replacing with grass turf.

- 6.17. Refer to **Appendix 6D 051064-R01-07 – Outline Construction Methodology** for the specific construction methodology undertaken along the grid route including cable trenching, joint bays and watercourse crossings.
- 6.18. **Appendix 6B** shows the standard construction specification for grid connection. Volume 2 provides the grid and interconnection drawings including but not limited to: drawings **051064-DR-11 – Ducting through Regional/local roadways**, **051064-DR-111** ducting through access track, **051064-DR-112** - Communication chamber details, **051064-DR-113** – Earth link Chamber Details, **051064-DR-115** – joint bay section detail, **051064-DR-116** – 110kV joint bay general arrangement and details, **051064-DR-122** - HDD crossing details, **051064-DR-140-153** – Joint bays sections and **051064-DR-121** – Ducting in flat formation section are provided in **Volume 2**.

Horizontal Directional Drilling (HDD) Methodology

- A works area of circa 40m² for the HDD entry side and circa 20m² on the HDD exit side will be required for the HDD equipment and vehicles. These areas will be fenced off during the HDD implementation.
- The drilling rig and fluid handling units will be located on the entry side and will be appropriately bunded using sandbags, which will contain any fluid spills and stormwater run-off.
- Entry and exit pits (2m x 3m x 1m) will be excavated; the excavated material will be temporarily stored within the works area and used for reinstatement or disposed to a licensed facility.
- The HDD pilot bore will be undertaken using a wireline guidance system. Assembly will be set up by the drilling team and steering engineer.
- The pilot bore will be drilled to the pre-determined profile and alignment under the dry canal and Wood of O road.
- The steering engineer and drill team will monitor the drilling works to ensure that modelled stresses and pressures are not exceeded.
- The drilled cuttings will be flushed back by drilling fluid to the entry and exist pits and recycled for re-use.
- Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit side which will then be pulled back to the entry side as part of the pre-reaming/hole opening process to enlarge the hole to the correct size.

- When the pre-reaming/hole opening/hole cleaning has been completed, a reamer of slightly smaller diameter than the final cut will be installed on the drill string to which the ducts will be attached for installation.
 - The drilling fluid will be disposed of to a licensed facility.
 - The ducts will be cleaned and proven and their installed location surveyed.
 - The entry and exit pits will be reinstated to the specification of ESB Networks and any requirements of Offlay County Council.
 - During periods of forecasted rain, HDD will not be performed.
- 6.19. A joint bay/transition chamber/transition coupler will be installed on either side of the drill shot, following the horizontal directional drilling procedure, as per ESB requirements, which will serve as interface between the HDD ducts and the standard ducts.
- 6.20. **Volume 2** shows the proposed HDD location (**figure 105**) and the indicative drilling options (**Figure 106**) for and the interconnection cables. A HDD is may also be required where the grid route intersects the Corndonagh Stream on the L1025 at Chainage 4180m shown on **Figure 103 (volume 2)** and indicative drilling options in **051064-DR-122** in **Volume 2**.

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

- 6.21. Prior to the commencement of construction, a fully detailed Construction Traffic Management Plan (CTMP) will be prepared by the Contractor and submitted to Offaly County Council for approval. The aim of a CTMP is to put in place procedures to manage grid connection and interconnection cables construction traffic effectively. It will outline measures to enhance the efficient transportation of construction materials and machinery whilst minimising delay and disruption to general traffic.
- 6.22. A typical Construction Traffic Management Plan will:
- Identify sensitive areas (e.g. schools, homes and local settlements);
 - Be aware of road restrictions (e.g. narrow roads, bridges with restrictions etc.);
 - Identify the location of suitable parking facilities for private cars and plant;
 - Ensure there are designated vehicular routes on site with speed restrictions;
 - Ensure safe access and egress from site;
 - Gain permissions for any required road closures, diversions etc. from the relevant bodies;
 - Consult with An Garda Síochána and relevant local authorities;
 - Schedule site deliveries outside of times of peak traffic volume;
 - Schedule deliveries with regard to drop-off and collection times of local national schools; and
 - Ensure erection of the required signage as per Chapter 8 of the Traffic Signs Manual.
- 6.23. Careful traffic management procedures will minimize the overall level of disruption experienced. Delays to traffic will be kept to a minimum and full use will be made of the available carriageway and verges.
- 6.24. The CTMP will make provision for safe access at all times to the works zone for all businesses in proximity to the works. Where access is affected, the contractor will engage with the affected business to resolve the issue, such as a temporary route or plan working hours to suit the business.
- 6.25. The CTMP will make provision for safe access at all times to private residences in proximity to the works. Steel plates will be available with all construction crews to facilitate egress and access to residential dwellings. All facilitative works shall be done in cooperation with the local residents in the works area. Residents affected by particular works will be made aware in

advance of the impending works for that day and the anticipated progress of that particular construction crew. The contractor shall ensure that throughout the course of the works its operations do not put pedestrians at risk.

- 6.26. The signing lighting and guarding cardholder will set up the signs, cones and delineation devices in line with the *Traffic Signs Manual Chapter 8*.
- 6.27. Where road widths allow, the UGC installation works will allow for one side of the road to be open to traffic by means of a 'Stop/Go' type traffic management system, where a minimum 2.5m roadway will be maintained at all times. Where it is not possible to implement a 'Stop/Go' system a full road closure will be required, this is likely to be the case where the road alignment occurs as well as Joint Bay 13. Temporary traffic signals will be implemented to allow road users safely pass through the works area by channelling them onto the open side of the road. Typically, the UGC will be installed in 60m sections, and no more than 100m will be excavated without the majority of the previous section being reinstated. Where the construction requires the crossing of a road, works on one carriageway will be completed before the second carriageway is opened, to maintain traffic flows.
- 6.28. In the event of emergency, steel plates, which will be available on site, can be put in place across the excavation to allow traffic to flow on both sides of the road.

Road Opening Licences

- 6.29. The UGC works will require a road opening licence under Section 254 of the Planning and Development Act 2000-2015 from Offaly County Council. In the event that planning consent is granted for the proposed development, this PCTMP will be updated prior to commencement of development to address the requirements of any relevant planning conditions, including any additional mitigation measures, which are conditioned and will be submitted to the planning authority for written approval. The final CTMP will outline the location of traffic management signage, together with the location of any necessary road closures or mitigation measures and the routing of appropriate diversions. Where diversions are required, these will be agreed with Offaly County Council in advance of the preparation of the final CTMP.

Waterways Ireland Wayleave Licence

- 6.30. Draft details of the proposal including drawings/location maps showing directional drill works under the dry canal and the road re-alignment of two sections of the Wood of O were provided to Waterways Ireland. Waterways Ireland responded with a letter of support. A wayleave application will be submitted post consent and prior to construction once the detailed design of the HDD crossing and final levels of the works relative to the canal bed and the detailed design of the road re-alignment are determined.

Timing Restrictions

- 6.31. All traffic movements will be carried out between the hours of 08.00 and 20.00 Monday to Friday and 08.00 and 18.00 Saturdays. Public holidays will be observed unless otherwise agreed with the local planning authority. Deliveries will also be scheduled to avoid peak times, i.e. avoiding rush hours and after school pick up times.

Construction Parking

- 6.32. It is forecast that there will be approximately five staff on site at any one time during the construction period, although this will vary subject to the overall programme of works. It is anticipated that only one crew will be required for each 100m section of works, and these will all be one or two vans. These will either park within the coned working area on the public highway, or within the substation area, should space be limited.

MITIGATION

6.33. The impact of the Proposed Development has been identified as temporary in nature and associated with a short construction stage only. It is still important that any impact is minimised as far as possible and, in light of this, the following mitigation measures should be considered:

- Advanced publicity outlining the traffic management proposals and duration and giving advance warning of specific traffic management measures;
- Adequate advance signing of the works;
- Using the existing road for cabling works at off-peak hours;
- Using more than one crew at different location along the route to shorten the duration of the grid connection works; and
- Using appropriate machinery to maintain access along the public roads at all times.

6.34. Other mitigation measures include:

- Road signage is to be put in place throughout the site to comply with the traffic management plan;
- Signage will be cleaned and maintained regularly;
- Public roads will be kept clean by sweeping when necessary; and
- All vehicles will be limited to an appropriate maximum speed to be determined in the Construction traffic management plan.

Traffic Control Measures

6.35. All signs to be put in place before works begin, as per the Department of Transport Traffic Signs Manual, Chapter 8 – Temporary Traffic Measures & Signs for Road works.

- All machine operators must be trained, experienced operators, trained to FAS CSCS standard, as per Construction Regulations. All workers will attend an Induction Course before work begins. All dangers will be explained & a record of this will be kept on file.
- Warning signs to be posted to highlight the dangers involved. All access points to be closed/barricaded to prevent access by unauthorized persons. Only authorized personnel allowed on site. A responsible person to be on site at all times. All signs,

cones & barriers must be put in place, as per the Traffic Signs Manual, Chapter 8 – Temporary Traffic Measures & Signs for Roadworks.

- All signs and cones will be set up by the responsible person who has completed a 3-day Signing, Lighting and Guarding at Roadworks Course and is the holder of a SAFE PASS card. This complies with requirements under The Construction Regulations for Temporary Traffic operations supervisor.
- All signs to be inspected by a SAFE PASS cardholder before work begins. All employees to ensure signs are in place & maintained at all times. Any problems to be reported to the responsible person on site.
- A safety zone will be maintained at all times between workers and vehicles using cones & barriers.
- All signs to be put in place as per the guidance for The Control and Management for Traffic at Roadworks 2010.
- Follow Guidelines from Department of Transport Traffic Signs Manual.
- For safe passage of pedestrians through any work area, follow the Department of Transport Guidelines.
- A Safe System of Work Plan (SSWP) Working on Roads will be completed on site by the foreman and it will be explained to all staff and they will be asked to sign it (see attached at **Appendix 6C**).

APPENDICES

Appendix 6A: Figures

- Figure 6.1: Traffic Management General Arrangement Up to 60km/h
- Figure 6.2: Traffic Management General Arrangement Up to 100km/h

Appendix 6B: Standard Specification for ESB 110kV Network Ducting

Appendix 6C: SSWP - Working on Roads

Appendix 6D: Outline Construction Methodology



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