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Decommissioning Plan

Proposed 110kV Substation and Underground Grid Connection at Killoran, Co. Tipperary

On behalf of

Soleirtricity Lisheen Ltd

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Form ES - 04

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Soleirtricity Lisheen Ltd

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1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') has been commissioned by Soleirtricity Lisheen Ltd ('the Applicant') to prepare a Decommissioning Plan for the proposed 110kV substation (henceforth referred to as the '110kV Substation') and associated 110kV underground cable (henceforth referred to as 'the UGC') connecting the proposed 110kV substation to the existing Lisheen 110kV ESB substation and all associated works.

The 110kV Substation and UGC (henceforth collectively referred to as the 'Proposed Development') will be located at Killoran, Thurles, Co. Tipperary (ITM OS Reference 621463 666719).

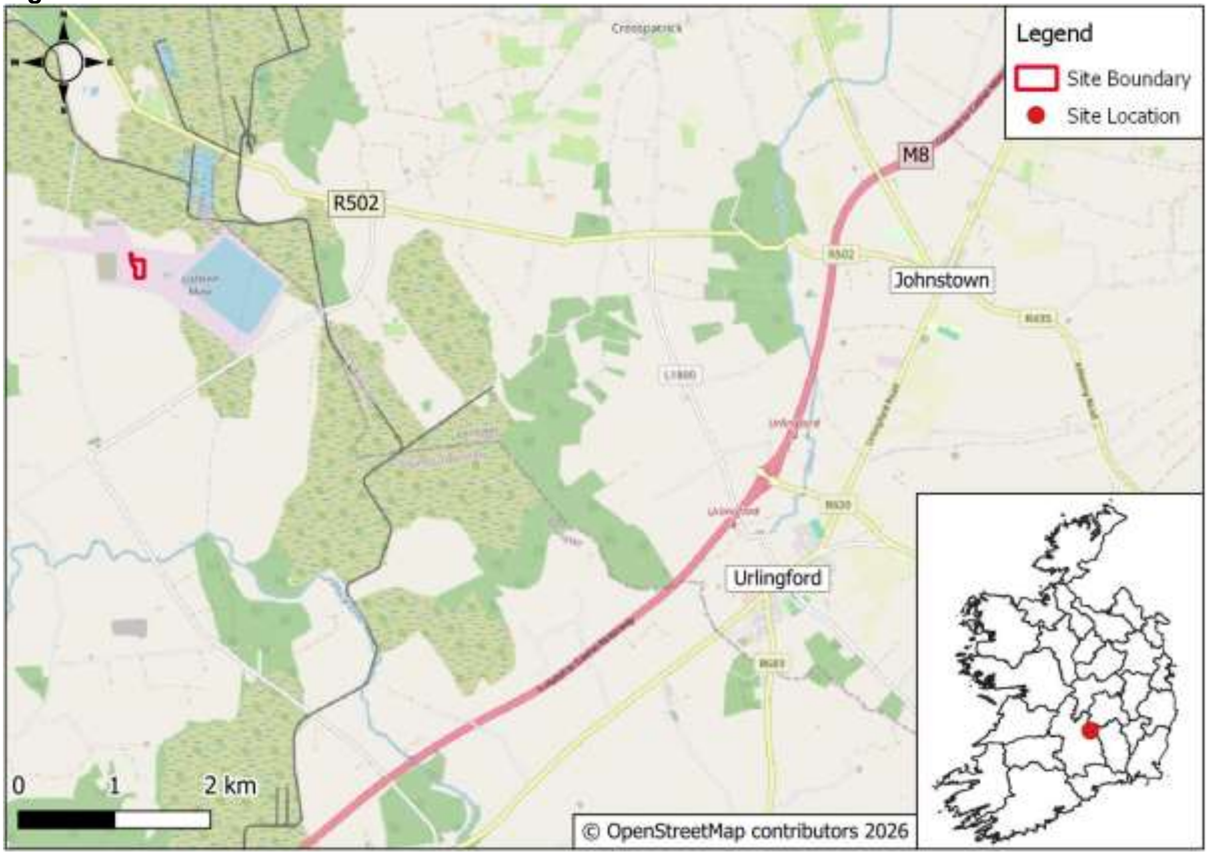
The Proposed Development will transmit power from the permitted Lisheen Solar Photovoltaic ('PV') Farm (Planning Ref: 21/1128) (henceforth referred to as the 'Permitted Solar Development') via the UGC, which will connect into the existing Lisheen 110kV ESB substation located circa ('ca.') 750m west of the Permitted Solar Development. Please note that this Permitted Solar Development has received a 76MEC AC EirGrid Grid Connection Offer to export to the national electricity transmission system.

1.1 Site location

The Proposed Development will be located on a site that is ca. 2 hectares ('ha') and is situated in the townland of Killoran, North Tipperary, ca. 6.3km northwest of Urlingford and ca. 12.6km southeast of Templemore (henceforth referred to as the 'Site'). The Site is shown in Figure 1-1.

The Permitted Solar Development will be located on the former Tailings Management Facility ('TMF') on lands that Vedanta Lisheen Mining Limited currently manages under an Integrated Pollution Control ('IPC') License P0088-04 that the Environmental Protection Agency ('EPA') regulates.

Figure 1-1: Site Location



1.2 Purpose of the Decommissioning Plan

The purpose of this Decommissioning Plan is to describe how the Applicant proposes to restore the Site to its former agricultural use post-operation. This document provides an overview of the anticipated activities during the Decommissioning Phase and outlines mitigation measures to address any potential adverse environmental impacts resulting from these activities.

1.3 Site Context and Description

The Site is ca. 2 ha in size and situated in the townlands of Killoran, North Tipperary, ca. 6.3km northwest of Urlingford and ca. 12.6km southeast of Templemore. The Site is accessed from the existing Lisheen Mine entrance via the L3201 road. The Site is in proximity to Junction 4 on the M8 (north of Urlingford) motorway and the R502 and R639 regional roads.

The Site is currently vacant and comprises predominantly of recolonising bare ground and areas of artificial surfaces. The existing Lisheen 110kV ESB substation is located immediately to the north of the Site. The Site is bounded by the former Tailing Management Facility and the Permitted Solar Development, ca. 400m to the east. A building currently occupied by Irish Bioeconomy Foundation personnel, recently acquired by Tipperary County Council, is located ca.100m to the west of the Site. Two buildings occupied by AQS Environmental Solutions personnel, along with associated carparking, are located ca. 50m to the south of the Site.

The surrounding wider area is a mix of the Lisheen Mine Windfarm and associated infrastructure, agricultural farmland and bogland currently harvested by Bord Na Móna.

1.4 Background

The Proposed Development will be critical infrastructure, intrinsically linked to permitted and planned renewable energy projects, that will initially comprise a large-scale consented solar development.

The Proposed 110kV Substation will be required to facilitate a step-up of the medium voltage supply (33kV) from the Permitted Solar Development to the existing Lisheen 110kV ESB Substation. The design of the Proposed Development will mean that it could be readily expanded in the future to accommodate other renewable energy projects and, as such, it will be a key node on the grid.

It is proposed that, subject to obtaining consent for the Proposed Development, the proposed 110kV substation will be developed in place of a previously permitted 38kV substation granted by Tipperary County Council (Planning Ref: 211128).

It is predicted that the Proposed Development will be constructed in conjunction with the Permitted Solar Development as part of one development (henceforth known as the 'Overall Development').

Tipperary County Council Planning Ref: 211128 – Granted

> *The construction of a Solar PV development with a maximum export capacity ('MEC') of up to 122MW, comprising ca. 214,800 no. photovoltaic panels laid out in arrays, the construction of a 38kV Substation (ca.57.31m2 x 4.45m tall), along with associated ancillary development, including 30 no. Transformer Stations (ca. 7.27m2 x 2.6m) with an integrated bund, 716 string Inverters, 1 no. DNO Substation Building (16.28m2 x 5.42m), 1 No. Storage and maintenance building (ca. 57.31m2 x 4.45m tall), 38 no. CCTV cameras mounted on ca. 3.8m high poles, perimeter security fencing and all ancillary works. The total development area will be ca. 77ha.*

TCC granted the Permitted Solar Development on 23rd February 2022. Figure 1-2 illustrates the Permitted Solar Development and the Proposed Development.

Figure 1-2: Site Context

2 DECOMMISSIONING

Decommissioning consists of the removal of all components associated with the Proposed Development, management of excess waste materials and the restoration of the project lands, as applicable.

2.1 Description of the Proposed Development

The Proposed Development will consist of:

- Construction of a new 110kV tail-fed transmission substation; and,
- Underground cable connecting the substation to the existing Lisheen 110kV ESB Substation.

2.1.1 110kV Tail-Fed Substation

The Proposed Development will consist of a 10 year permission for a 110kV electrical substation and associated 110kV underground grid connection, cabling and associated works. The Proposed Development will transmit power from a solar farm (permitted under Tipperary County Council Reg. Ref: 21/1128), which will connect into the existing Lisheen 110kV ESB substation.

The proposed 110kV electrical substation in Killoran, on a site of 2ha will consist of:

a) 1 no. electrical substation compound and access road, palisade fencing and gates;
b) 1 no. electrical substation compound / IPP control building measuring 10.74m x 20.15m and 6.920m in height;
c) Station compound extension required at Lisheen 110kV station to facilitate the new Cooleeny 110kV cable bay;
d) 1 no. Eirgrid switch room building measuring 18m x 25m and 8.55m in height;
e) 1 no. lightning protection monopoles measuring up to 22m in height;
f) A main step-up transformer;
g) Associated ancillary equipment such as electrical apparatus, plant and equipment;
h) Overhead and underground electrical and communications cabling and ancillary works; and,
i) All associated ancillary works above and below ground, including raising a portion of the site by ca.1m using imported engineering fill;

This switchyard will be enclosed in a palisade-type security fence. The proposed 110kV substation will also have its own control building to house the indoor switchgear and control, and protection equipment.

The Proposed 110kV Substation is required to coincide with the 76 MEC AC EirGrid Offer for the Permitted Development. This switchyard will be enclosed in a palisade-type security fence. The proposed 110kV substation will also have its own control building to house the indoor switchgear and control, and protection equipment.

The Proposed 110kV Substation is required to coincide with the 76 MEC AC EirGrid Offer for the Permitted Development.

<u>CCTV</u>

The on-site CCTV would be remotely monitored via a 24/7 operational team who would alert all relevant personnel in the event of a break-in or vandalism at the Site. The cameras will only be focused along the fence line and will not be focused on any residential properties.

Fencing

The switchyard will be enclosed in a palisade-type security fence. A perimeter fence will be installed to provide security and restrict access by wildlife.

Lighting

Emergency lighting will only occur as part of the Proposed Development.

2.1.2 110kV Underground Grid Connection

The 110kV underground cabling is proposed from the proposed 110kV substation to the existing Lisheen 110kV ESB substation, will consist of:

a) Ca. 225m of underground 110kV electrical cables and associated communications cables;
b) Three 125mm diameter HDPE power cable ducts;
c) One 100mm diameter HDPE communications ducts;
d) One 125mm diameter earth continuity duct to be installed in an excavated trench, typically 825mm wide by 1,315mm deep;
e) 1600sq mm Al cable;
f) 240sq mm copper earth continuity cable;
g) One fibre cable; and,
h) All associated ancillary works above and below ground.

The UGC will be installed in a cable trench as per industry standards, including ducting, fibre optic conductor, insulated earthing conductor where required, as well as link boxes at some jointing locations. The Energy Supply Board ('ESB') will ultimately be responsible for ensuring that the most appropriate connection option is selected. This asset, together with the substation, will be owned and operated by the Independent Power Producer ('IPP').

This Decommissioning Plan is based on current procedures and experience. However, at the time of decommissioning, all procedures will be re-evaluated to ensure that all decommissioning activities will be in accordance with all applicable guidance at that time.

2.2 Decommissioning Fund

At the cessation of electricity generation by the solar farm and within its lifespan, the Proposed Development will be fully decommissioned, and the land will be reinstated to its former use within 12 months. Project decommissioning is a simple and swift process owing to the method in which the modules and supporting structures are installed on-site. Broadly speaking, project decommissioning comprises the dismantling and removal from the Site of all substation infrastructure and components. The following principles will be applied in decommissioning:

- Revenues from the sale of dismantled raw materials per weight (mainly aluminium, steel and copper) will outweigh decommissioning and restoration costs. Therefore, no reserve account needs to be set up to ensure enough financial means are available to restore the Site.

To alleviate any concerns that the Council may have in relation to these decommissioning works, prior to commencement of development, the developer shall lodge with the Planning Authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the Planning Authority, to secure the satisfactory reinstatement of the Site on cessation of the project coupled with an agreement empowering the Planning Authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be agreed in writing between the Planning Authority and the developer or, in default of agreement, shall be referred to An Coimisiún Pleanála ('ACP') for determination.

2.3 Timeframe

The Proposed 110kV Substation is expected to be operational in accordance with the Permitted Development. The Permitted Development has been granted an operational lifespan of 40 years. On cessation of activities, the Permitted Development will either be redeveloped, or the Site will be redeveloped in an alternative form.

It is not anticipated that the 110kV Substation will be decommissioned within this timeframe. Any decommissioning of the 110kV infrastructure will be undertaken only following written confirmation and formal instruction from EirGrid or the relevant statutory body.

Decommissioning activities will be carried out in accordance with the timeframes outlined within the applicable planning conditions.

While not expected and considered extremely unlikely, in the event that the construction or operation activities cease prior to the project completion, with no expectation of construction to restart, the development will be decommissioned as described in this report.

2.4 Equipment Dismantling and Removal

At the end of the Permitted Development's lifetime, the Permitted Development will be disconnected from the ESB power grid. However, depending on energy requirements in 40 years, a potential option may be to repower the solar farm and continue operations. If such a scenario arises, the need for the proposed decommissioning works will be negated.

As part of the Permitted Development, the decommissioning tasks and removal of all components will be completed within ca. twelve months of the cessation of electricity generation, and the Site will be returned to its previous usage. All structures will be completely dismantled and removed (including underground electrical interconnection and distribution cables) as detailed below.

Given the nature of the Permitted Development, it is considered highly unlikely that any adverse effects on the environment would occur as a result of decommissioning works. Regardless, decommissioning works will be carried out in accordance with best practice guidelines and the applicable legislation at the time of decommissioning.

2.4.1 110kV Substation

In the event that part of, or the entire Proposed 110kV Substation is to be decommissioned, all structures, equipment and materials to be decommissioned will be removed and the land reinstated fully to agricultural use or another appropriate use.

Any decommissioning of the 110kV infrastructure will be undertaken only following written confirmation and formal instruction from EirGrid or the relevant statutory body.

2.4.2 Electrical Cabling

The high-voltage connection, underground electrical interconnection and distribution cables will be disconnected, removed and recycled off-site by an approved recycling facility.

All cabling will be either sent for recycling at a licensed recycling facility for further use or reused where appropriate. If cables are not in a condition to be reused, they will be disposed of at an appropriately licensed waste transfer facility.

Underground cables will be disconnected from the local electricity transmission network and lifted from the trenching. Following the removal of the cable, trenches and ground surfaces will be immediately backfilled, compressed and restored to their former condition.

The 110kV UGC along the grid route will be left in situ where required, as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance for an underground element that is not visible, with no environmental impact associated with leaving the ducting in situ.

All security systems, CCTV, associated supports and wiring shall be dismantled and removed off-site for recycling by an approved recycling facility.

2.4.3 Other Components

Any above-ground lines and poles that are not owned by ESB or EirGrid will be removed, along with their associated equipment, and the holes will be filled.

All electrical equipment will be removed and recycled off-site by an approved metals recycler. All fences surrounding the Site will be dismantled and removed off-site for recycling by an approved metals recycler.

2.5 Drainage

Any drainage identified as damaged following the removal of electrical materials from the Site will be repaired upon completion of the decommissioning works.

2.6 Noise

The decommissioning works are not envisioned to create significant adverse noise effects; however, there is a possibility for temporary increases in noise levels within the immediate vicinity of the works. Overall, noise impacts during decommissioning will be localised and temporary in nature.

In addition, the noise emissions during decommissioning will not exceed a $L_{Aeq,T}$ noise level of 65dB 3 metres from the facade of any occupied residential dwelling.

All decommissioning works will take place during similar hours to those of the Construction Phase - 08:00 and 20:00 Monday to Friday and between 08:00 and 18:00 on Saturdays. No decommissioning works will be undertaken outside these hours or on Public Holidays without the prior agreement of the Planning Authority.

2.7 Traffic

All imported Engineering fill will remain in place. Therefore, the traffic numbers and movements will be reduced to those expected during the Enabling and Construction Phases.

It is envisaged that the access routes utilised during the Decommissioning Phase of the Proposed Development will be the same as those used during the Construction Phase.

2.8 Waste

All waste generated will either be reused, sent to an approved / licenced recycler or returned to the manufacturer for appropriate recycling / disposal. All components of the development should be reused or recycled as much as reasonably practicable.

All residual waste will be removed by a licensed contractor and transported to a licensed waste facility. Due to the nature of the Proposed Development, a very limited volume of residual (non-recyclable) waste is expected to be generated.

2.9 Landscape

Overall, it is not anticipated that the removal of the structures and compounds within the developments will leave any open excavations; however, where necessary, the ground will be regraded to original contours using on-site materials.

2.10 Cultural Heritage

As part of the Decommissioning Phase, there will be no subsurface impacts on any of the potential archaeological features as outlined in the Archaeological Impact Assessment (‘AIA’).

The 110kV Substation has been designed to avoid impact on all known archaeological monuments and features. The 110kV UGC along the grid route will be left in situ, and any moments will thus be fully protected during the Decommissioning Phase if required.

3 SUMMARY

Given the nature of the Proposed Development, the short timeframe of the decommissioning works, and the small amount of infrastructure to be removed, it is considered highly unlikely that any of the decommissioning activities will pose any significant environmental risks.

This Decommissioning Plan will be updated prior to the commencement of any works to ensure that the plan will remain in accordance with all best available technology and site restoration methods.