ECOLOGY REPORT

Project Reference	Proposed Substation & Grid Route Connection, Athlone, Co. Roscommon
Date & Time	2025/04/29
Subject	Ecology Report
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Introduction

MKO was contracted to conduct ecological surveys as part of the planning requirements for a Strategic Infrastructure Development (SID) consisting of the proposed installation of 100kV substation & grid connection development at TDC Community Solar PV Part at Cuilglass, Creagh, Taduff West, Taduff East, Thomastown E.D., Athlone, Co. Roscommon.

A first order tributary of the Cross rivers flows through the proposed underground cabling (UGC) at the point of the proposed instream works involving open trenching for the cable installation within the Proposed Development. The Cross River offers connectivity to the River Shannon Callows SAC. A dedicated otter survey involving the deployment and collection of trail cameras was undertaken by MKO on the 26th of August and 18th of September 2024 at the location of the proposed Hydrological Directional Drilling (HDD) crossing at the Cross River. The HDD works are located over 20m from the potential Otter holt.

Two otters were recorded swimming upstream to the entrance of the potential otter holt along the Cross River. The holt was therefore presumed to be an active otter holt.

Due to the proximity of HDD works to the potential holt recorded (over 20m) within the Cross River, and in line with the relevant guidance (NRA 2009) a derogation licence is sought for the Proposed Development to minimise the potential for ex-situ disturbance and displacement impacts to Otters in the Cross River during the proposed HDD works within the Cross River.

Precondition Tests

Article 16 of the Habitats Directive sets out three pre-conditions, all of which must be met before a derogation from the requirements of Article 12 or Article 13 of the Directive can be granted. These preconditions are also set out in Regulation 54 of the Regulations. The preconditions are as follows:

1. **A reason (s) listed in Regulation 54 (a)-(e) applies**
2. **No satisfactory alternatives exist**
3. **Derogation would not be detrimental to the maintenance of population (s) at a favourable conservation status.**

It is believed that the pre-conditions for granting a derogation licence have been met, as follows.

1. <u>Test 1 Reasons for Seeking Derogation</u>

Regulation 54(2) (a)–(e) states that a derogation licence may be granted for any of the reasons listed (a) to (e). We are of the opinion that the following reason applies:

(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

The Proposed Development comprises the construction of a 110kV substation located to the southeast of the permitted TDC Community Solar Park site (PI Ref. 20/36 & PI Ref.21/350) and adjacent to the permitted Battery Energy Storage Station (BESS) (PI Ref. 23/197). The Proposed Development will also contain enabling infrastructure to allow connection to the national grid via the existing Athlone 110kV substation located in the outskirts of Athlone town.

In July 2021, the Climate Action, and Low Carbon Development (Amendment) Act 2021 was signed into law, committing Ireland to reach a legally binding target of net-zero emissions no later than 2050. Subsequently, the Government published the Climate Action Plan 2024 announcing a renewable electricity target of 80% by 2030. The Proposed development will assist in achieving the Government's and EU's stated goals of ensuring safe and secure energy supplies, promoting an energy future that is sustainable. The Proposed Development will improve public health and safety by reducing GHG emissions, helping tackle climate change. The Proposed Development will provide economic benefits to Ireland by enabling renewable energy produced from the solar farm to be entered into the national grid via the substation and grid connection route, proving safer and cheaper renewable energy throughout Ireland, reducing Ireland's reliance on fossil fuels.

2. <u>Test 2: There is no Satisfactory Alternative</u>

If the Proposed Development were not to go ahead, the opportunity to contribute to Irelands EU and national climate targets would be removed. The production of renewable energy from the proposed development will assist in achieving the Government's and EU's stated goals of ensuring safe and secure energy supplies, promoting an energy future that is sustainable and competitively priced to consumers whilst combating energy price volatility and the effects of climate change.

No suitable satisfactory alternatives for the proposed water crossing are feasible. Originally the proposed water crossing was to take place approximately 190m upstream of the current river crossing location. Discussions and various meetings were held with Roscommon County Council who are the landholders of a field to the north of the River Cross, where the grid connection route was proposed to traverse through. However, access and use of this land to facilitate and locate the site infrastructure was not permitted by the County Council in the end. Therefore, the location of the water crossing had to change as a result of this decision. The possible Horizontal Direction Drilling (HDD) locations within this area of the Proposed Development boundary are further constraint as the land is restricted by vehicular access. The area within the Proposed Development is essentially an 'island' as the River Cross cuts this site off to the east, west and north and the M6 motorway isolates this landholding to the south of the Proposed Development boundary. The area is heavily constraint to where machinery can ingress and where there is enough suitable land coverage to enable the Horizontal Directional Drill (HDD) works to take place and to facilitate the HDD pit locations. This HDD crossing location is the only section of this 'island' that has an access track along the northern boundary for the grid connection construction works to adjoin to and therefore minimalize

the loss of habitats during the construction phase of the Proposed Development. For these reasons, suitable alternatives to facilitate the Proposed Development were not feasible and therefore an otter derogation licence is sought for this Proposed Development.

Test 3: Favourable Conservation Status

Annex IV species must be maintained at Favourable Conservation Status or restored to favourable status if this is not the case at present. The net result of granting a derogation licence must be neutral or positive for the species in question.

From the dedicated Otter surveys carried out by MKO on the 26th of August and 18th of September 2024, it was concluded on a precautionary basis that the otter holt identified along the Cross River has the potential to be an active holt, as two otters were recorded swimming upstream to the entrance of the holt. The below listed mitigation measures will be in place to minimise the potential disturbance and displacement to otters. Provided that the development is carried out in accordance with the design, best practice and mitigation that is described within this report, significant effects on otters are not anticipated at any geographic scale.

Site Location

The Proposed Development is located in the townlands of Taduff East, Taduff West, Curraghaleen, Mihanboy, Ardgawna, Crannagh Beg and Monksland, Athlone, Co. Roscommon. The Proposed Development is intended to connect the permitted TDC Community Solar Park (which is a c. 80MW solar farm located at Taduff West and adjacent townlands, Athlone, County Roscommon) to the national grid. The proposed substation site is located within a lowland landscape comprising of agricultural grassland. The site is bounded by the L75817 local road and the M6 along its southern most extent. The site will be accessed through the consented TDC Community solar farm site entrance via the L2026 permitted under Pl. Ref. 20/36. An internal road consented under the BESS application (Pl. Ref. 23/197) links the BESS facility to the solar farm. This track will also be used to access the substation compound. It is proposed to provide a new temporary access track off the L2026 and upgrade the existing access track to facilitate construction access including the delivery of abnormal loads. The Site Location is shown on **Figure 1** below.

Characteristics of Proposed Development

The Proposed Development comprises the construction of a 110kV substation located to the southeast of the permitted TDC Community Solar Park site (PI Ref. 20/36 & PI Ref.21/350) and adjacent to the permitted Battery Energy Storage Station (BESS) (PI Ref. 23/197). The Proposed Development will also contain enabling infrastructure to allow connection to the national grid via the existing Athlone 110kV substation located in the outskirts of Athlone town.

The proposed 110 kV substation has been designed in accordance with EirGrid's functional specifications for 110kV substations and consists of a 110kv single bay extendable tail-fed Air insulated substation to be identified as Taduff/Mihanboy Substation, which will comprise of the following:

- 2 no control buildings,
- EirGrid 110kV substation compound, including 1 no. 110kV cable bay and 1 no. 110kV transformer bay,
- Associated internal underground cabling up to 33kV,
- 1 no. 110/33kV transformer (TRAFO) compound with concrete blast wall, and associated equipment including Capacitor bank cable sealing end, surge arrestor, earth disconnect, current/voltage transformer, house transformer, and circuit breaker.
- 1no. diesel generator.
- 2.6m high palisade fencing and 1.4m high post & rail fencing;
- 2no. gated accesses to the substation; lamp posts, lightning masts, security cameras and poles, drainage infrastructure. and,
- the electrical components necessary to transmit the electrical energy generated to the national grid.

The 110kV substation site will be accessed via the consented TDC Community Solar Park entrance (permitted under Pl. Ref. 20/36). Construction stage access/egress will be via a new temporary access proposed to the north of the existing junction of the L2026 and the L-20265. This access will be used to facilitate the delivery of abnormal loads and will link into the permitted internal track. Replanting of trees and hedgerows is also proposed along the internal track.

An internal track consented under the BESS application (Pl. Ref. 23/197) links the BESS facility to the solar farm and this track will also be used to access the proposed 110kV substation.

Widening and realignment along the permitted access track including the removal of sections of existing stone wall is also proposed to facilitate construction stage access including the delivery of abnormal loads.

The proposed grid connection consists of an approximate 4.8km long 110kV single circuit underground grid connection (UGC) between the proposed Mihanboy 110kV Substation and the existing ESB Athlone 110kV Substation, of which approximately 1.3km will be underneath an unnamed public road to the north of the M6 motorway, with the remainder being underneath public roads. The proposed 110kV underground grid connection route is situated predominantly in the public road corridor with portions of the proposed grid connection route located offroad and in third party lands. The proposed grid connection route will exit the proposed 110kV substation at Mihanboy on its southern boundary and will continue to the existing 110kV Athlone Substation on the outskirts of Athlone town. The grid route will travel east through the townlands of Ardgawna and Crannagh Beg before diverting south around the industrial building at Monksland.

Approximately 130m of the UGC will require Horizontal Directional Drilling (HDD) under the M6 motorway and the River Cross, with 2 no. temporary drilling pits, 1 no. located to the immediate north and 1 no. located to the immediate south of the M6 motorway, and 2 no. temporary drilling pits, 1 no. located to the immediate north and 1 no. located to the immediate south of the River Cross. Both HDD areas will comprise of a temporary work area with associated equipment and 2m high HERAS fencing.

The UGC route will consist of a trench containing 3 no. 160mm diameter HDPE power cable ducts, 2 no. 125mm diameter HDPE communications ducts, and a 63mm diameter Earth Continuity Duct, along with associated cable joint bays, link boxes and communication chambers.

Horizontal Direction Drilling (HDD)

Horizontal Direction Drilling is a method of drilling under obstacles such as bridges, railways, watercourses, etc. in order to install cable ducts under the obstacle. This method is employed where installing the ducts using standard installation methods is not possible.

The “Cross River" traverses private land between both the proposed substation and the existing substation along the UGC. The proposed HDD will cross under the river a minimum of 1.5 m under the bed of the river. This depth is based on locating a suitable clay/silt formation for HDD. The required depth may increase subject to geotechnical investigations in the form of bore holes will be required in the land either side of the crossing point. typical HDD watercourse crossing details are shown on **Figure 2** below.

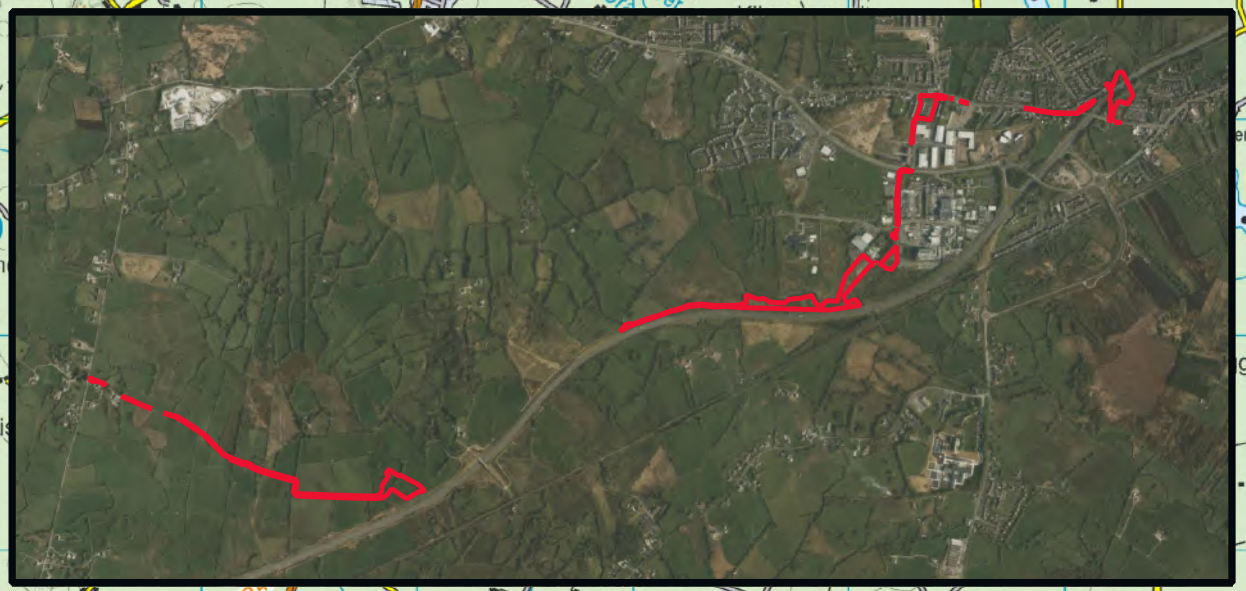
The drilling methodology for proposed HDD crossings is as follows:

- A works area of circa. 40 m2 will be fenced on both sides of the river crossing,
- The drilling rig and fluid handling units will be located on one side of the bridge
- Entry and exit pits (1 m x 1 m x 2 m) will be excavated using an excavator, the excavated material will be temporarily stored within the works area and used for reinstatement or disposed of offsite to a licensed facility.
- A 1 m x 1 m x 2 m steel box will be placed in each pit. This box will contain any drilling fluid returns from the borehole.
- The drill bit will be set up by a surveyor, and the driller will push the drill string into the ground and will steer the bore path under the watercourse.
- A surveyor will monitor drilling works to ensure that the modelled stresses and collapse pressures are not exceeded.
- The drilled cuttings will be flushed back by drilling fluid to the steel box in the entry pit.

- Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit pit and will pull a drill pipe back through the bore to the entry side.
- Once all bore holes have been completed, a towing assembly will be set up on the drill and this will pull the ducting into the bore.
- The steel boxes will be removed, with the drilling fluid 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 ESBN, EirGrid and Roscommon County Council.
- A transition coupler will be installed at either side of the crossing following the horizontal directional drilling as per ESB and EirGrid requirements, this will join the HDD ducts to the standard ducts.

Map Legend

Proposed Development boundary



Drawing Title

Site Location Map

Project Title	
Proposed Substation & Grid Route Connection, Athlone Co. Roscommon	
Drawn By: CT	Checked By: EF
Project No.: 220907-a	Drawing No.: Figure 2-1
Scale: 1:35,000	Date: 05/03/2025

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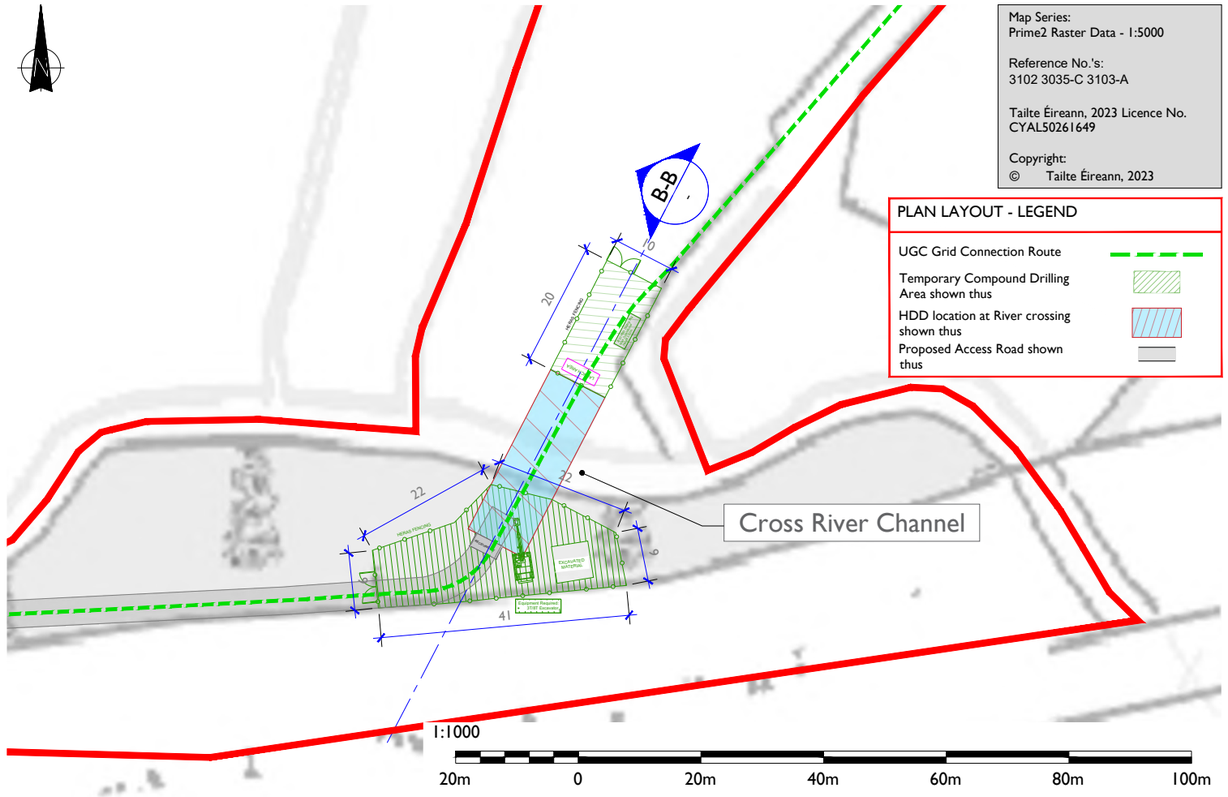
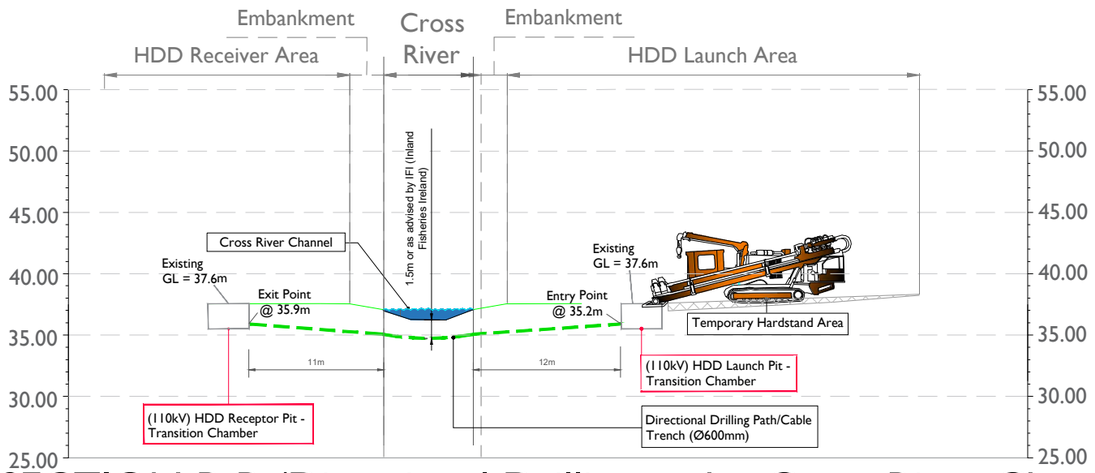


HDD Crossing Location - Plan Layout

SCALE 1:1000



SECTION B-B (Directional Drilling under Cross River Channel)

SCALE 1:500

Image 1: Directional Drilling Rig

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EDF renewables

PROJECT
TDC Solar Community
110 kV Substation & Grid Connection

PROJECT NUMBER
05-807

SHEET NUMBER
05807-DR-460

SHEET TITLE
Typical Horizontal Directional Drilling Watercourse Crossing Detail

DRAWING STATUS
For Planning

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P4	04.02.25	Issued for Planning
P3	18.11.24	Issued for Planning
P2	12.09.24	Issued for Planning
P1	22.01.24	Issued for Planning

Otter Survey

Methodology

All ecological surveys undertaken by MKO were conducted in accordance with NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (NRA, 2009).

A first order tributary of the Cross River flows through the proposed UGC at the point of the proposed instream works involving open trenching for the cable installation within the Proposed Development. The Cross River offers connectivity to the River Shannon Callows SAC. As a result, was surveyed for the present of otter at the location of the proposed HDD works. This habitat was optimal and a search of the surrounding areas for evidence of otter activity was conducted as per NRA (2009) guidelines (Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes). This involved a search for all otter signs e.g. spraints, scat, prints, slides, trails, couches and holts and a search of the suitable riparian habitat within 10m of the watercourse which is generally considered to comprise part of the otter habitat when surveying rivers. During the otter survey on the 26th of August of 2024, a camera trap was deployed on at a location of a potential otter holt. This camera trap was collected on the 18th of September and the footage was analysed. The otter survey also followed the guidance as set out in NRA (2008) '*Guidelines for the Treatment of Otters Prior to the Construction of National Roads Schemes*' and following CIEEM best practice competencies for species surveys (CIEEM, 2013).

Results

Two otters were recorded swimming upstream to the entrance of the holt (**Plate 1).** The holt was therefore presumed to be an active holt on a precautionary basis. No other signs in the form of scat, spraint, prints, slides or couches were recorded along the Cross River at the time of surveying.

Plate 1 Snapshot of two otters recorded on camera trap footage swimming upstream along the Proposed Development boundary

Mitigation Measures

Disturbance

Prior to the commencement of construction works associated with the Proposed Development, the following measures will be undertaken for the avoidance of disturbance to otters, and to ensure no additional holts have been established since the original surveys were undertaken. The following measures are in line with '*Guidelines for the Treatment of Otter Prior To The Construction of National Road Schemes* (TII 2008[1]).

- A pre-commencement survey for otter will be carried out prior to any works commencing to assess any changes in the baseline activity within the holt. The holt will be monitored one month from the commencement of works to identify any changes to the activity within the holt. If it is found to be a breeding holt, the NPWS will be consulted, and works will be ceased until appropriate mitigation is implemented and approved by the NPWS.
- All construction works will be at least 20m away from the holt.
- A tool-box talk will be given by the onsite ECoW to notify the contractors of the presence of the holt and outline the mitigation measures that will be followed to prevent disturbance to the species.
- All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 "European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996".
- Regular maintenance of plant will be carried out in order to minimise noise emissions. Particular attention will be paid to the lubrication of bearings and the integrity of silencers.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works.
- Compressors will be of the "sound reduced" models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machines, which are used intermittently, will be shut down during those periods when they are not in use.

Conclusion

Given the findings of the otter surveys carried out by MKO, and the proximity of the otter holt to the proposed development footprint, a derogation licence is sought for the current project to minimise the potential for ex-situ disturbance and displacement impacts to Otters in the River Cross during the construction of the proposed project.

[1] National Roads Authority (2008) Guidelines for the treatment of otters prior to the construction of National Road Schemes.