APPENDIX 15-5

TII Design Report

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PROPOSED KILLOSHULAN WIND FARM & PROPOSED GRID CONECTION ROUTE

Section on N77, County Kilkenny

Design Phase Procedure for Road Safety Improvement Schemes, Urban Renewal Schemes and Local Improvement Schemes

DN-GEO-03030 Design Report

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October 26th, 2026
AL Project No: 9931

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1 INTRODUCTION

This TII Design Report has been prepared for a section of the Proposed Grid Connection that is proposed to connect the Proposed Killoshulan Wind Farm (Proposed Project), located in Killoshulan and surrounding townlands in County Kilkenny, to the existing Ballyragget 110kV Substation, located in the townland of Moatpark, County Kilkenny.

It is proposed that a section of the Proposed Grid Connection (GC) measuring approximately c.780m will be installed within the curtilage of the existing carriageway of the N77 National Road, as shown in Figures 1 and 2 below.

An assessment of the impacts of the construction of the proposed GC are set out in the EIAR prepared for the proposed Killoshulan Wind Farm.

Figure 1 - Proposed Grid Connection Route between Moatpark Substation and the Proposed Killoshulan Wind Farm – Section 1 on the N77 (Section Existing N77 / L5833 junctions and direction of Proposed Grid Connection route (Approximately c.780m)

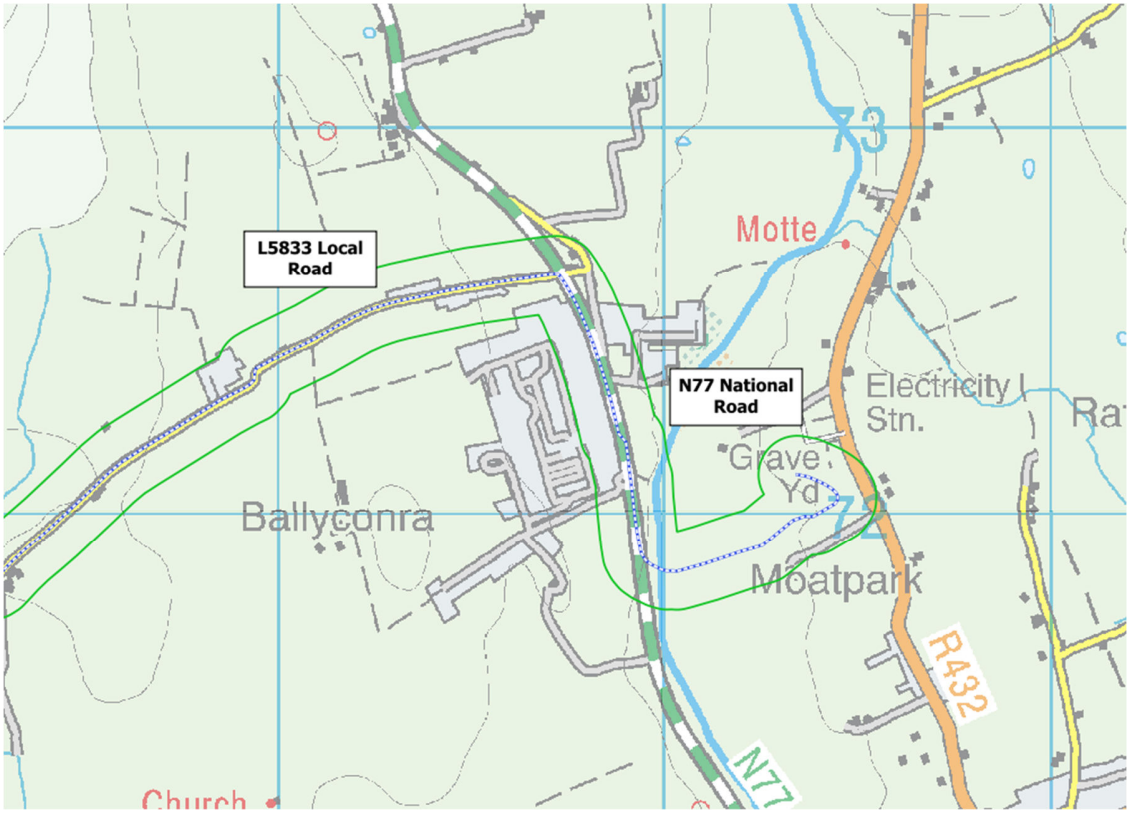


Figure 2 – Existing N77 on section proposed for Grid Connection (Source Google Street view (September 2025))

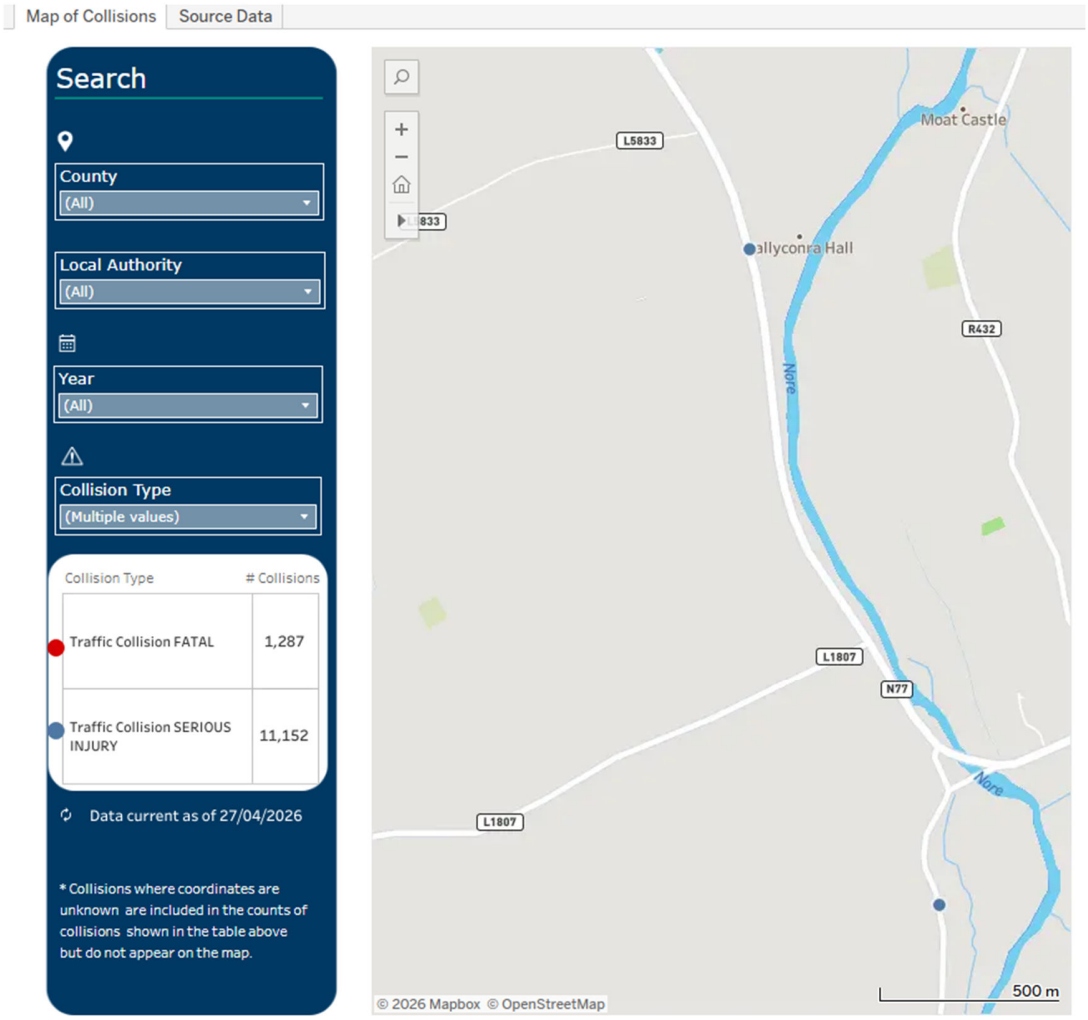


This report is prepared in response to a request made by An Coimisiún Pleanála (ACP) as part of the scoping stage of the Proposed Killoshulan Wind Farm.

2 COLLISION HISTORY

Collision history is again available from the Road Safety Authority (RSA) website. As shown in the extract included as Figure 3 below, there was one collision resulting in a serious injury on this section of the N77 during the 9-year period from 2016 -2024 inclusive. It is noted the incident occurred in March 2017 and that there have been significant improvements implemented on this section of the N77 since that date.

Figure 3 – Collision statistics 2016 – 2024 (Sources: Road Safety Authority website)



3 SAFETY OBJECTIVES

The safety objectives during the installation of the Proposed GC on the c.780m section of the N77 are;

- To facilitate a safe environment for the construction staff during the installation of the GC, site.
- To provide a safe environment for background traffic on the N77 during the construction of the N77.
- To maintain the relative free flow of traffic on the N77 National Road at all times.

4 EXISTING CONDITIONS

4.1 Speed

The speed limit is on the N77 at this location is 100km/hr.

4.2 Traffic Volumes

An observed all-day traffic flow of 6,675 vehicles was observed on the section of the N77 proposed for the GC in the year 2026 (Source - TII ATC count site on the N77 between Abbeyleix and Durrow, Kilamuck, Lo. Laois).

4.3 Horizontal Alignment

The horizontal alignment of this section of the N77 is straight. There are no changes proposed to the alignment of the N77 as part of the Proposed Project.

4.4 Vertical Alignment

The vertical alignment on this section of the N77 is relatively flat. There are no changes to the vertical alignment proposed.

4.5 Cross Section, Crossfall & Super elevation

4.5.1 Cross Section

In general, the cross section of the N77 at this location is 2 x 3.5m traffic lanes and 2 x 2.5m hard shoulders, (Type 1 single carriageway). There are no permanent changes proposed to the existing cross section.

4.5.2 Super elevation

There is no superelevation this section of the N77.

4.6 Junctions & Accesses

There are a number of dwellings, Tirlán Processing Facility and the Ballyragget Wastewater Treatment Plant that gain access onto this section of the N77. Access to these properties and facilities will be maintained at all times during the estimated 8-day construction period.

4.7 Facilities for Vulnerable Road Users

There are currently no facilities for vulnerable users at this location. Based on the nature of the proposed works there are no facilities for vulnerable road users proposed as part of the Proposed Project.

4.8 Visibility & Sightlines

Forward visibility along this section of the N77 is clear due to its straight alignment.

5 ENVIRONMENTAL, ARCHAEOLOGICAL AND OTHER CONSTRAINTS

5.1 Appropriate Assessment

Not Applicable

5.2 Ecological Assessment

Not Applicable

5.3 Other Environmental Surveys

Not Applicable.

5.4 Archaeological Constraints

Not Applicable.

6 PROPOSED DESIGN

6.1 General

It is proposed that a section of the proposed Underground Grid Connection (GC) route measuring approximately c.780m will be installed within the curtilage of the existing carriageway, as shown in Figure 1 and 2.

The underground cabling works will consist of the installation of ducts in an excavated trench to accommodate power cables, and a fibre communications cables to allow communications between the proposed 110kV onsite substation and the existing 110kV Ballyragget substation.

The proposed grid connection works will require a road opening licence under Section 254 of the Planning and Development Act 2000, as amended, by Kilkenny County Council. A Traffic Management Plan (TMP) (included as Appendix 15-2 of the Killoshulan Wind Farm EIAR) will be agreed with the local authority prior to the commencement of the development where required.

At a minimum it is proposed that a "Stop & Go" traffic system will be in operation for the full duration of the works in order to maintain 2-way flow at all times. During the detailed design of traffic management measures all efforts will be made to retain a constant 2-way traffic flow through the point of construction. It is estimated that the duration of the works on the N77 will last approximately 8 working days. A detailed traffic management layout will be prepared for the transient work on the N77 in accordance with the "Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works" (DoT now DoTT&S) and "Guidance for the Control and Management of Traffic at Roadworks" (DoTT&S). A member of construction staff (flagman) and signage will be present at all times. A temporary reduction in the speed limit on this section of the N77 will be proposed as part of the traffic management measures.

All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers. All works will be done in accordance with the Guidelines for the Opening, Backfilling and Reinstatement of Openings in Public Roads, DTToS, September 2015.

6.2 Link capacity and junction capacity

In accordance with Rural Road Link Design the capacity of this section of the N77, which is a Type 1 Single Carriageway, is 11,600 ADT, at level of Service D. During the detailed design of the traffic management measures proposed for the estimate 8-day construction period, all efforts will be made to minimise the impact on the carrying capacity on this section of the N77.

6.3 Land Acquisition

There is no land acquisition required as part of the proposed temporary works.

6.4 Horizontal Alignment

There are no changes proposed to the horizontal alignment on the N77.

6.5 Vertical Alignment

There are no changes proposed to the vertical alignment on the N77.

6.6 Cross Section Crossfall & Super elevation

6.6.1 Cross Section

There are no permanent changes proposed to the cross section on this section of the N77.

6.6.2 Crossfall

There are no changes proposed to the crossfall on the N77.

6.6.3 Super elevation

There is no super elevation on this section of the N77 and no changes are proposed.

6.7 Facilities for Vulnerable Road Users

There are no changes proposed for conditions for vulnerable road users on the N77.

6.8 Junctions & Accesses

There are no permanent changes proposed to existing junctions and accesses on the N77. Access to all existing properties will be maintained at all times during the construction of the Proposed GC on this section of the N77.

6.9 Visibility and Sightlines

No changes are proposed relating to sightlines or forward visibility on this section of the N77.

6.10 Drainage

On completion of the proposed works all drainage on this section of the N77 will be reinstated to its pre works condition.

6.11 Pavement

On completion of the proposed works the carriageway pavement on this section of the N77 will be reinstated to its pre works condition.

6.12 Safety Barrier Risk Assessment and Provision

There are currently no safety barriers on this section of the N77. No changes are proposed.

6.13 Traffic Signs and Road Markings

On completion of the proposed works all traffic signs and road markings on this section of the N77 will be reinstated to pre works condition.

6.14 Accommodation Works

All works will be undertaken within a cordoned environment in accordance with the “Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works” (DoT now DoTT&S) and “Guidance for the Control and Management of Traffic at Roadworks” (DoTT&S).

6.15 Lighting

There is no existing lighting on this section of the N77. Temporary lighting will be installed as part of the temporary works.

6.16 Departures from Standard

The proposed works involve the installation of a proposed GC within the curtilage of the carriageway of c.780m section of the N77 which will require temporary traffic management measures for a period of approximately 8 days. There are no other changes proposed on the N77.

7 ROAD SAFETY AUDIT

A Road Safety Audit will be prepared for these works prior to construction.

8 TOTAL SCHEME BUDGET

There are no cost estimates available at present.

9 PROPOSED NEXT STEPS

Subject to being granted planning permission the next steps will be to finalise construction drawings and compile a construction tender package.