APPENDIX 15-4

STAGE 1 ROAD SAFETY AUDIT

traffico
ROAD SAFETY ENGINEERING

Lackareagh Wind Farm, Co. Clare

Stage 1 Road Safety Audit

EDF Renewables Ireland Ltd.

August 2024

traffico

Lackareagh Wind Farm, Co. Clare

Stage 1 Road Safety Audit

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Notice

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Document History

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Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

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1. Introduction

1.1 Report Context

This report describes the findings of a Stage 1 Road Safety Audit associated with the proposed Lackareagh Wind Farm, Co. Clare.

The Audit has been completed by Traffico on behalf of EDF Renewables Ireland Ltd.

1.2 Details of Site Inspection

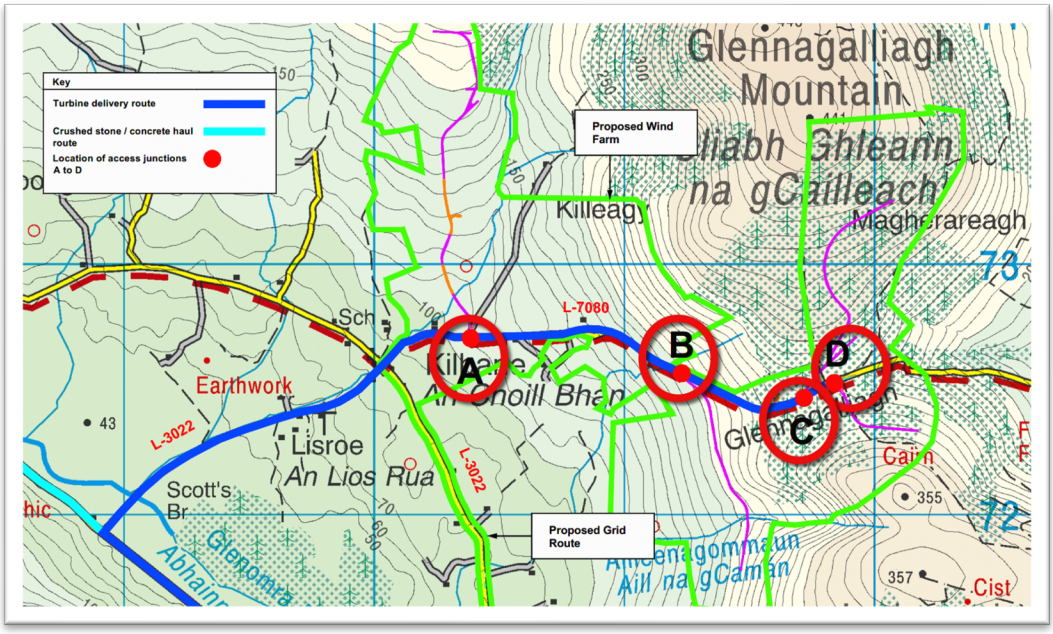
Date	Daytime / Nighttime	Weather & Road Conditions
Tuesday 23rd July 2024	Daytime	Overcast, showers & damp roads.

Table 1.1 – Site Inspection Details

1.3 Locations Considered for This Road Safety Audit

The following access junctions along the turbine delivery route were examined as part of the audit (A, B, C & D).

Figure 1.1 – Locations Considered for Road Safety Audit (Extract from ALT&TC's Figure 15-2c)



1.4 The Road Safety Audit Team

The members of the Road Safety Audit Team have been listed following:

Status	Name / Qualifications	TII Auditor Reference No:
Audit Team Leader (ATL)	**Martin Deegan** BEng(Hons) MSc CEng MIEI	MD101312
Audit Team Member (ATM)	**John Ryan** BEng CEng MSc BE	JR*101

Table 1.2 – Audit Team Details

1.5 Design Information Examined as Part of the Audit Process

The following drawing(s) were examined as part of the Road Safety Audit (RSA) process:

Drawing No.	Drawing Title	Revision
Figure 15-1	Site location and delivery routes	-
Figure 15-2c	Wind farm access junctions	-
Figure 15-8	Access Junction A on L-7080 (T1 and T2) – proposed junction layout during construction and operational phases	-
Figure 15-10	Access Junction B on L-7080 (T6 and T7) - proposed junction layout during construction and operational phases	-
Figure 15-12	Access Junction C on L-7080 (T3 and T4) - proposed junction layout during construction and operational phases	-
Figure 15-14	Access Junction D on L-7080 (T5) - proposed junction layout during construction and operational phases	-

Table 1.3 – Designers Drawing List

1.6 Road Safety Audit Compliance

Procedure and Scope

This Road Safety Audit has been carried out in accordance with the procedures and scope set out in TII publication number GE-STY-01024 - Road Safety Audit.

As part of the road safety audit process, the Audit Team have examined only those issues within the design which relate directly to road safety.

Compliance with Design Standards

The road safety audit process is not a design check, therefore verification or compliance with design standards has not formed part of the audit process.

Minimizing Risk of Collision Occurrence

All problems described in this report are considered by the Audit Team to require action in order to improve the safety of the scheme and minimise the risk of collision occurrence.

2. Road Safety Issues Identified

2.1 Problem: Turbine Delivery Route Traversing Walking Trail

Location: Turbine Delivery Route Along Local Road L7080

The turbine delivery route follows the (narrow) L7080 which coincides with a posted walking trail. This could increase the risk of walkers (and other local traffic) coming into conflict with construction vehicles.

Figure 2.1 – Narrow Bendy Section of L-7080 which Coincides with Walking Route

Recommendation

Appropriate (rigorous) temporary traffic management measures should be set in place to minimise risk of conflicts between construction vehicles and other local traffic (especially walkers) along the turbine delivery route.

2.2 Problem: Sightlines Partially Obscured by Field Boundary

Location: Access Junction A | Field Boundaries Along Local Road L7080

Junction sightlines appear to be partially obscured by the existing field boundaries, which includes ditch foliage and some trees. This could lead to side impact type collisions within the access junction's conflict zone.

Figure 2.2 – Field Boundaries Impacting Upon the Right-Hand Sightline

Recommendation

The field boundaries should be modified to ensure that appropriate sightlines are provided at the access junction.

2.3 Problem: Gradient of Access Road on Approach to Local Road

Location: Access Junction B | Connection Point to Local Road L7080

The combination of steep approach gradient and unusual horizontal curvature could lead to delivery vehicles getting stuck or overturning at the access junction.

Figure 2.3 – Steep Gradient & Restrictive Horizontal Curvature Could Lead to Vehicle Overturning

Recommendation

The horizontal and vertical alignment of the access road should be carefully designed to mitigate the risks described (the inclusion of a suitable dwell area is likely to help in this regard).

2.4 Problem: Errant Vehicles Getting Stuck in Soft Verge

Location: Access Junction D | Soft Verge with Level Difference at Access Junction

The combination of approach gradient, horizontal curvature and the (unforgiving) boggy soft verge could lead to delivery vehicles getting stuck or overturning.

Figure 2.4 – Approach Gradient & Soft Verge Could Lead to Errant Delivery Vehicles Getting Stuck

Recommendation

The horizontal and vertical alignment of the access road should be carefully designed to mitigate the risks described (the inclusion of a suitable dwell area is likely to help in this regard).

3. Audit Team Statement

3.1 Certification & Purpose

We certify that we have examined the drawing(s) listed in Chapter 1 of this Report.

Sole Purpose of the Road Safety Audit

The Road Safety Audit has been carried out with the sole purpose of identifying any features of the design which could be removed or modified to improve the road safety aspects of the scheme.

3.2 Implementation of RSA Recommendations

The problems identified herein have been noted in the Report together with their associated recommendations for road safety improvements.

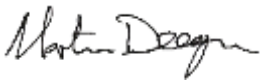
We (the Audit Team) propose that these recommendations should be studied with a view to implementation.

Audit Team's Independence to the Design Process

No member of the Audit Team has been otherwise involved with the design of the measures audited.

3.3 Road Safety Audit Team Sign-Off

Martin Deegan
Audit Team Leader
Road Safety Engineering Team
traffico

Signed: 
Date: 8th August 2024

John Ryan
Audit Team Member
Road Safety Engineering Team
traffico

Signed: 
Date: 8th August 2024

4. Designers Response

4.1 How the Designer Should Respond to the Road Safety Audit

The Designer should prepare an Audit Response for each of the recommendations using the Road Safety Audit Feedback Form attached in Appendix A.

When completed, this form should be signed by the Designer and returned to the Audit Team for consideration. See flow-chart following for further description.

Figure 4.1 – Road Safety Audit Sign-Off and Completion Process

4.2 Returning the Completed Feedback Form

The Designer should return the completed Road Safety Audit Feedback Form attached in Appendix A of this report to the following email address:

- Email address: martin@traffico.ie

The Audit Team will consider the Designer's response and reply indicating acceptance or otherwise of the Designers response to each recommendation.

Triggering the Need for an Exception Report

Where the Designer and the Audit Team cannot agree on an appropriate means of addressing an underlying safety issue identified as part of the audit process, an Exception Report must be prepared by the Designer on each disputed item listed in the audit report.

Appendix A

A.1 Road Safety Audit Feedback Form

Road Safety Audit Feedback Form

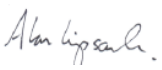
Scheme: Lackareagh Wind Farm, Co. Clare

Audit Stage: Stage 1 Road Safety Audit | **Audit Date:** 8th August 2024

Problem Reference (Section 2)	Designer Response Section			Audit Team Response Section
	Problem Accepted (yes / no)	Recommended Measure Accepted (yes / no)	Alternative Measures or Comments	Alternative Measures Accepted (yes / no)
2.1	Yes	Yes	It is confirmed that a comprehensive set of traffic management measures, including signage and the presence of "Flagmen" will be put in place on the L-7080 during the construction of the Proposed Wind Farm.	Designer comment noted and accepted.
2.2	Yes	Yes	As shown in Figure 15-8 of Chapter 15 of the EIAR, the L-7080 and the existing junction will be improved with visibility splays appropriate for traffic speeds during construction and the operational phase provided. It is noted traffic management measures, including signage and a "flagman" will be in place at all times during the construction phase.	Designer comment noted and accepted.
2.3	Yes	Yes	The proposed junction design shown in Figure 15.9 of Chapter 15 of the EIAR is designed in accordance with Section 5.6.3 of TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with respect to gradients. Junction radii of 9m are proposed to provide for standard small to medium sized HGV turning movements during the operational phase. The junction layout for the delivery of the abnormally sized loads takes account of an autotrack assessment undertaken for these vehicles. The proposed construction of the new access roads and connections with the existing L-7080 is detailed in Section 4.4.2.1 of the EIAR and will comprise of; *A layer of geogrid or geotextile material will be laid at the formation level to separate the road building material from the subsoil.*	Designer comment noted and accepted.

Problem Reference (Section 2)	Designer Response Section			Audit Team Response Section
	Problem Accepted (yes / no)	Recommended Measure Accepted (yes / no)	Alternative Measures or Comments	Alternative Measures Accepted (yes / no)
			A minimum of 450mm of granular fill material, such as Class 6F2 stone, will then be placed and compacted in layers, as specified by the detailed designer. *The road will then be finished with a 150mm layer of capping material, such as Cl. 804. The road will be finished with a surface layer with a setback of up to 15m from the road edge.*	
2.4	Yes	Yes	The proposed junction design shown in Figure 15.13 of Chapter 15 of this EIAR is designed in accordance with Section 5.6.3 of TII Junction Design Guidelines (TII DN-GEO-03060) for junctions with respect to gradients. In addition junction radii of 9m are proposed to provide for standard small to medium sized HGV turning movements during the operational phase at the eastern junction. A swept path analysis for the abnormally sized loads was undertaken to inform the design for these deliveries. Access road construction details will be as for 2.3 above	Designer comment noted and accepted.

**The Designer should complete the Designer Response Section above, then fill out the designer details below and return the completed form to the Road Safety Audit Team for consideration and signing.*

Designer's Name:	Alan Lipscombe	Designer's Signature:		Date:	14/08/24
Employer's Name:	John Conaghan	Employer's Signature:		Date:	14/08/24
Audit Team's Name:	Martin Deegan	Audit Team's Signature:		Date:	16th August 2024

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