Inspector's Report

ACP-323761-25

Development	Construction of wind energy development and all associated works
Location	Located within Cloondahamper, Cloonascragh, Elmhill, Cooloo, Lecarrow, Dangan Eighter, Lissavally and Slievegorm, County Galway.
Planning Authority	Galway County Council.
Applicant(s)	Neoen Renewables Ireland.
Type of Application	Permission under 37E of the Planning and Development Act 2000, as amended – Strategic Infrastructure Development – RED III
Prescribed Bodies	Department of Defence Department of Housing, Local Government and Heritage Health Service Executive Irish Aviation Authority Inland Fisheries Ireland Office of Public Works Transport Infrastructure Ireland Uisce Éireann
Observers	List in Appendix B.

Date of Site Inspection	19th & 20th May 2026.
Lead Inspector	Heidi Thorsdalen
Inspector	Sinead O'Conner

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1.0 Introduction

1.1. Overview

1.1.1. This case concerns an application for strategic infrastructure under section 37E of the Planning and Development Act, 2000, as amended. The application is for a proposed wind farm development of 9 no. wind turbines and all site related works, commonly referred to as Cooloo Wind Farm.

1.1.2. The application is made on foot of pre-application discussions with the Commission under ABP-316466-23 for 9 no. wind turbines with an estimated generating capacity of between 54 and 64.8 MW, where the Commission decided that the development would fall within the scope of section 37A of the Act and would be strategic infrastructure.

1.1.3. An Opinion of Flexibility (ref. ABP 322632-25) signed by the Commission on 17th September 2025 accompanies the application. The details unconfirmed are the turbine rotor diameter and hub height. The range of parameters under which the turbine dimensions will fall are specified on the public notices and in the design flexibility opinion that accompanies the application. I have listed the turbine parameter range for which flexibility sought is as listed in Table 3.1 below

1.1.4. The applicant outlines that the grid connection, onsite 110kV substation and onsite Battery Energy Storage System (BESS) will be subject to a separate planning application.

1.2. Submission of Application

1.2.1. The planning application was lodged with the Commission on the 29th September 2025.

2.0 Site Location and Description

2.1. The proposed development is to be located northeast County Galway, approximately 10km southeast of Tuam and 1km north of the N63. The nearest villages are Barnaderg, approximately 3.1km to the west of the subject site and Moylough, approximately 5.3km to the east.

2.2. The stated application site area for the proposed wind farm is 299.2 hectares (ha) and is located within the townlands of Cloondahamper (Blake), Cloonascragh, Elmhill, Cooloo, Lecarrow, Dangan Eighter, Lissavally and Slievegorm.

2.3. The subject site is centred at grid reference ITM X 555689 ITM Y 748834.

2.4. The subject site is in located in a rural and lowland landscape. The elevation range between 65m AOD to 85 AOD with local landform undulations. The subject site comprises of areas of agricultural grassland, raised bog and cutover bog, and commercial forestry. The raised bog within the northwestern part of the subject site is referred to as Cooloo Bog. The area is sparsely populated and accessed via a network of local roads. The subject site is accessed via the R332 Regional Road and L6301 local road.

2.5. The Lough Corrib Special Area of Conservation (SAC) is located approximately 90m to the north of the subject site and is crossed by the future grid connection route. Summerville Lough Natural Heritage Area (NHA) is located c. 3.1km to the east of the subject site.

3.0 Proposed Development

3.1. Overview

3.1.1. The planning application is for a proposed wind farm development of 9 no. wind turbines and all site related works, commonly referred to as Cooloo Wind Farm. The components of the proposed development are provided in more detail below and summarised from the submitted documentation.

3.1.2. A 10-year planning permission is applied for with a 35 operational life for the turbines from the date of commissioning of the entire wind farm.

3.1.3. Components that are considered an integral part of the proposed Cooloo Wind Farm and assessed in the Environmental Impact Assessment and the Appropriate Assessment, but which are not included in this planning application include grid connection, 110kV substation and Battery Energy Storage System.

3.1.4. For ease of reference, I have applied the following terminology throughout my report:

- The subject site – the planning application boundary.
- Proposed development or proposed wind farm – in reference to the components of this planning application.
- Proposed Project – in reference to the proposed wind farm in combination with the future grid connection, substation and BESS.
- Accommodation works – in reference to turbine delivery route (TDR) accommodation works.
- Grid connection proposals – in reference to future grid connection route, 110kV substation compound and the BESS proposals.
- Substation Compound – in reference to 110kV substation and the BESS.
- Grid Connection Route (GRC) – in reference to the underground cabling to Cloon 110kV substation.

3.2. Turbines

3.2.1. The application consists of 9 No. turbines with permanent turbine hardstands and foundations are proposed. As noted above, it is requested that there is flexibility with the choice of turbines within the parameter range listed in Table 3.1 below.

Table 3.1 Summary of turbines and met mast specifications

Turbine Numbers & Specifications			
Turbines			9 no.
Blade Tip Height			180m
Rotor Diameter			Min. 150m to max. 162m
Hub Height			Min. 99m to max. 105m
Turbine output (approximate)			6 MW to 7.2 MW (54 to 64.8 MW) EIAR rated capacity is 7 MW.
Met mast height			100m
Turbine ID	**ITM Coordinates (moD)** **Easting**	**Northing**	**Elevation of top of Foundation (mOD)**
T1	555297	747613	73m
T2	555608	748030	76m
T3	555563	748640	75.5m
T4	556167	748591	83.5m
T5	556198	749183	66.5m

T6	555648	749699	73.5m
T7	555568	750508	70m
T8	556986	749348	76m
T9	556813	749855	66.5m
Met mast	555128	747944	-

3.2.2. **Turbine foundation, hardstanding and assembly area:** Each turbine will be placed on a concrete turbine foundation, installed below the finished ground level. The approximate horizontal and vertical extent of the turbine foundation will be approximately 25m and 4m respectively. The turbine foundation may be formed using piling methods or on competent strata (i.e. bedrock or subsoil of sufficient load bearing capacity) (EIAR Figures 4-4 to 4-6). Hardstanding areas facilitating access and working area are required around each turbine base and will consist of levelled and compacted hardcore. Levelled assembly areas will be located on either side of the hard-standing area. The met mast details are provided in EIAR Figure 4-7 for T01.

3.3. Site Entrance

3.3.1. Construction access is via a proposed new temporary site entrance on the R332 regional road in the townland of Lissavalley (referred to as Access Junction 1). All construction traffic will enter and exit the subject site via this entrance. The temporary entrance includes a runover area to facilitate turbine delivery and is to be reduced in size and gated during operation.

3.3.2. To facilitate crossing of public roads within the proposed site, construction access junctions on either side of the L6506 (Access Junction 2) and on either side of the L6301 in two locations are proposed (Access Junction 4 and 5). There will be no construction access via the local public roads L6505 or L6301.

3.3.3. The proposed access track between the proposed construction entrance on R332 and the existing access track southwest of T01 (Access Junction 3) will be permanently gated during operation and only opened during plant replacement. Operational maintenance access for T01, T02 and substation compound will be via existing access from the R332 and the existing access track. Operational maintenance access for T03 and T04 will be from the L6301 via the proposed

southern junction (north-arm) and the south-arm of the junction will be permanently gated and only opened for plant replacement (Access Junction 4). Operational maintenance access for T05 to T09 will be from the L6301 via the proposed northern junction on L6301 (north-arm) and the south-arm of the junction will be permanently gated and only opened for plant replacement (Access Junction 5).

3.4. Onsite tracks, cabling and watercourse crossing

3.4.1. **Onsite Tracks**: It is proposed to upgrade c. 1.25km of existing tracks which will be constructed to the same level as existing ground levels. Approximately 9.3km of new access roads are proposed. As per Appendix 4-2 Peat and Spoil Management Plan, 7.2km are expected to comprise founded construction and 2.1km are expected to comprise floated construction.

3.4.2. **Cabling:** Connecting each turbine and to be run in cable ducts approx. 1.2 metres beneath ground level, along the sides of roadways or under the roadways.

3.4.3. **Watercourse Crossings:** 5 no. clear span watercourse crossings are proposed within the subject site, on the Dangan Eighter Stream (3 no.), Lecarrow 30 Stream (1 no.) and Forty Acres Stream (1 no.). Appendix 4-2 and Appendix 8-1 provide for the reprofiling of the banks of the Dangan Eighter Stream at one watercourse crossing.

3.5. Associated Works

3.5.1. **Site drainage:** No alteration of natural drainage courses within the subject site are proposed and no direct discharge to natural watercourses is proposed. Existing man made drains to be maintained where possible and integrated into proposed drainage system.

3.5.2. **Demolition Works**: An existing derelict structure located c. 180m southwest of T05 is to be demolished.

3.5.3. **Accommodation Works**: A temporary road across the field to the west of the N63/R332 junction to facilitate abnormal load deliveries only is proposed. The temporary access road is to be covered with topsoil and reseeded and road boundaries reinstated at the completion of the construction phase. Other temporary

measures required along the TDR include temporary local road widening, overruns of roundabout islands and temporary relocation of some signs and street furniture.

3.5.4. **Temporary construction compound**: One area of c. 10,240m^2 is proposed and located along the proposed construction access road southwest of T01. The construction compound will include a bunded refuelling and containment area, oil interceptor, waste storage area, temporary site offices, staff facilities and car-parking areas for staff and visitors. The construction compound will be reinstated to agricultural pasture on the completion of the construction phase

3.5.5. **Peat deposition areas**: Four areas proposed adjacent to substation compound (2 no.), T05 (1 no.) and T07 (1 no.) with a combined capacity of 22, 460m^3.

3.5.6. **Spoil management areas**: Five areas proposed adjacent to substation compound (2 no.), T05 (1 no.) and T07 (2 no.) with a combined capacity of 20, 530m^3.

3.5.7. **Tree Felling and Replanting**: Approximately 0.7 ha of commercial conifer plantation is to be felled near T09 and will be subject to a Limited Felling Licence application in accordance with the Forestry Act 2014 and the Forestry Regulations 2017 (SI 191/2017). Replacement or replanting have not been identified, and is stated in the EIAR that replanting will take place outside the hydrological catchment within which the proposed development is located.

3.6. Onsite 110kV substation, Battery Energy Storage System and Grid Connection

3.6.1. The onsite 110kV substation compound is located southwest of the wind farm site and measures approximately 34,765m^2. It includes the electrical substation and two control buildings, a Transmission Asset Owner (TSO) Control building and an Independent Power Producer (IPP) Control Building. Details on EIAR Figures 4-14 to 4-17.

3.6.2. The BESS is located adjacent to the onsite substation compound and will be linked to the onsite substation. The BESS consists of 15 no. steel containers and 6 no. power supply units. Section 2.3.5 of the CEMP states that the BESS will be permanent and part of the national electricity grid.

3.6.3. The onsite 110kV substation is intended to be connected to 110kV Cloon substation, an approximately 20.9km grid connection route (GCR). The underground electric and fibre communication cables will be placed alongside/within the onsite roads for approximately 2.6km and then within the public road corridor, following the R332 (2.2km), the N63 (4.2km), the L6234 (2.4km), the L2128 (860m), the L2115 (1.1km), the L2114 (105m), the L2125 (2.9km), the R347 (3.9km), the L6141 (335m) and 150m along the 110kV Cloon Substation access road. Joint bays are anticipated to be located approximately 1000m apart and communication chambers and earth sheath link chambers are located in proximity to the joint bays. The precise siting will be subject to approval by ESBN and EirGrid. The anticipated construction rate is 100m per day.

3.6.4. There are 7 no. of watercourse crossings along the GCR, 2 no. will be by Horizontal Directional Drilling (HDD), and 5 no. will cross over or under existing culvert. The crossing of the Athenry to Tuam railway will be by HDD.

3.6.5. As above, the onsite substation compound which includes the 110kV substation and BESS and the grid connection do not form part of the planning application.

3.7. **Transport Routes**

3.7.1. Turbine delivery route is assumed from the port of Galway. The selected TDR is shown on EIAR Figure 15-1a to be via the L5048 Lough Atalia Road, the R339, the L5034, the R336 Tuam Road, the N6/M6 (eastbound and exiting at Junction 18), the M17 (exiting at Junction 19), the N63 (northeast) and along R332 for approximately 2.1km to the proposed construction entrance. The TDR will utilise the consented N63 Liss to Abbey Realignment Scheme (reference ABP 312877-22).

Potential construction haul routes from identified quarries converge on the M17 junction 19 with the N63, and from there on follows the TDR to the proposed construction site entrance on the R322. Construction traffic associated with the transient GCR works will utilise the surrounding road network.

3.8. Construction

3.8.1. Construction is estimated to last 18 to 24 months for the Proposed Project and is noted to include three main overlapping phases: civil engineering works are estimated to take 10 months; electrical works will occur over 9 to 12 months; and turbine erection and commissioning will take 8 months.

3.9. Operation

3.9.1. The expected lifespan for the proposed development is approximately 35 years. The proposed development will operate automatically responding by means of meteorological equipment and control systems to changes in wind speed and direction. The proposed development will be monitored remotely 24-hours per day and with visual inspections and routine maintenance carried out.

3.9.2. The substation will form part of the national grid and will operate 24 hours per day, 7 days per week. Remote operational and monitoring activities will be carried out using a SCADA system, the substation can also be operated manually. Routine inspections and maintenance will be carried out.

3.10. Decommissioning

3.10.1. At the end of the operational lifespan, the proposed development will be decommissioned. Turbines and met mast to be disconnected from the grid, dismantled and removed. Foundations are to remain and covered by soils and left to revegetate. Underground cabling is to be removed, and cable ducts to be left in-situ. Access tracks are to be left be retained where requested to facilitate farm access.

3.10.2. Onsite 110kV substation and GCR to Cloon 110kV substation are stated within the EIAR to be permanent, forming part of the national grid and will not be decommissioned. The BESS is also stated within the EIAR to be permanent, and forming part of the national grid and will not be decommissioned.

4.0 Consultations

4.1. Submissions received from the planning authority and prescribed bodies are summarised in this section.

4.2. Chief Executives Report

4.2.1. The planning authority submitted a Planning Report on the proposed development to the Commission on the 3rd October 2025. Appendix 1 of the Planning Report appends submissions Tuam Municipal District Members and Ballinasloe Municipal District Members on the Chief Executive Report

4.2.2. Table 4.1 below provides a summary of comments received and the recommended conditions outlined in Section 11 of the Chief Executive's report.

Table 4.1 Summary of submission by Galway County Council

Topic	Summary
Principle of development	• Identifies relevant policy objectives as follows: Local Authority Renewable Energy Strategy (LARES) – Policy Objective 13, 14, 16 & 17; and Galway County Development Plan 2022-2028 – RE1, RE3, RE5 & RE7, and electricity and gas policy objectives in both Chapter 7 and 14. • Highlights the policy objectives supporting renewable energy generation and ancillary facilities and the balance with developments suitable location as referenced in the LARES and RE32 and RE5. • Notes 6 turbines located on lands designated as 'Open to Consideration' and remainder within 'Generally to be Discouraged', in close proximity to an area designated as 'Acceptable in Principle'. • With reference to national and regional policy, Policy Objectives RE3, RE5 and RE7 and areas of suitable locations identified in LARES, considers that the principle of the proposed development is acceptable, subject to the assessment of all other material planning considerations.
Community benefit fund	• Notes the proposed development will bring long-term socioeconomic benefits to the community.
Cumulative	• Identifies Clonberne WF, Laurclavagh WF, Shancloon WF within 25km study area.
EU Directives	• Identifies connectivity or ecological continuity with Lough Corrib SPA and Lough Corrib SAC. • Notes submitted NIS, EIAR and WFD compliance assessment. Identifies the Commission as the Competent Authority in regard to Articles 6(3) and 6(4) of the Habitat Directive, the EIA Directive (2014/52/EU) and the Water Framework Directive.
Landscape & visual	• Identifies the subject site as located within a Class 1 low landscape designation and notes 2 no. designated protected views and no designated scenic routes in the LVIA study area.

	• Notes the landscape findings of the EIAR. Considers the LVIA gives a clear indication that the proposed development will result in an intensification of wind energy development within this landscape. • Makes reference to recent Irish case law, highlighting that the overriding interests of renewable energy targets should take precedent over local landscape and visual impact considerations and local policies in this regard.
Heritage	• Notes relevant EIAR mitigation and monitoring measures. Recommends condition.
Biodiversity	• Notes Chapter 6 of the EIAR, the NIS, Construction Environmental Management Plan (CEMP), and the Biodiversity Management and Enhancement Plan (BMEP). No specific issues raised.
Population and human health	• Having regard to EIAR chapters 5 (human health and population), 10 (LVIA), 11 (Air quality) and 12 noise, the GCC Environment Department are of the opinion that the proposal would not result in adverse impacts on Population, Human Health and Residential Amenity.
Roads	Summarises comments from GCC Roads Department. • No Stage 1/2 Road Safety Audit submitted. • Concerns raised in respect of the design of the new entrance onto the R332. The vertical envelope of visibility (i.e. intervisibility) has not been demonstrated in accordance with TII standards. • Uncertainty arises in respect of the carrying capacity of the road network where traffic diversions and road closures are proposed, and in seeking third party consent for grid connection route. • Would endanger public safety by reason of traffic hazard, obstruction of road users or otherwise if permitted, and contrary to Policy Objective NNR2 and DM Standards 28 and 33a of the CDP. • Schedule of traffic conditions provided.
Climate, Carbon	Summarises GCC Climate Unit and Environment Department. • Generally supportive of wind energy production. • Loss of grazing land and release of carbon from disturbed peatland to be assessed. • Net carbon emissions to be assessed. • Extension of turbine lifespan to be considered and a more detailed decommissioning plan required.
Section 11 Conditions (C)	Summary of conditions and Standard wind farm conditions: • C1 to C3 – Plans, particular and timescales. • C6 & C7 – Turbine finishes and commencement. • C8 – Reinstament programme. • C23 – Control building finishes. • C27 – Community gain. Mitigation measures conditions: • C4 & C5 – EIAR/NIS mitigation measures. Noted to requires qualified environmental professionals, monitoring and reporting, and certification. • C10 – Aviation. • C11 – Operational noise limits and compliance monitoring. Limits noted to reflect the 2006 Guidelines with slight variation to the EIAR limits in relation to 7m/s. • C12 – Shadow flicker limits and reporting. Limits noted to reflect the 2006 Guidelines. • C13 – Telecommunication links and interference.

	• C14 – Archaeological appraisal. • C22 – Services and utilities. • C24 – Holding tank. • C25 – Construction hours. Noted to alter EIAR hours. • C26 – Construction and demolition wastes. Bonds and contributions: • C9, C20 & C28 – Reinstatement bond, Transportation bond, Development Contributions Scheme. GCC Roads Conditions: • C15 to C19 & 21 – Road design, road safety audit (stages 1/2 & 3), materials, junction visibility and 3rd party consents, surface water, road tie-in, pavement survey and scheme of works/repairs, spillage, traffic management plan, and licences. Noted to overlap with EIAR mitigation measures noted and with the Roads Authority's licensing processes.
Appendix	**Summary of observations on the proposed development by Tuam MD and Ballinasloe MD:**
Elected members	• Not in keeping with the landscape sensitivity of the area and will have an adverse impact on the built environment. • Need to protect the built environment for future development including tourism, amenities, other rural development and could reduce significantly the ability for new rural housing. • Turbines 6, 7 and 8 are not within the LARES area deemed appropriate, and should be excluded. • Adversely impact on local road infrastructure. • Not in keeping with protection of drinking water. • Impact on traditional boglands is unprecedented resulting longer lasting environmental impact. • Proposed intensification and concentration of large scale wind farm development within the district is not in keeping with sustainable development and could constitute over development. • Need to be considered in terms of the CDP's Galway County Transport and Planning Study.

4.3. Prescribed Bodies

4.3.1. Submissions were received from the following prescribed bodies, the contents of which are summarised in Table 4.2 below. Where recommendations relate to potential additional mitigations and conditions, I have identified these within the table.

Table 4.2 Summary of submission by prescribed bodies

Department of Housing, Local Government and Heritage (DAU) (dated 30/10/25):	
Nature Conservation	• Natura 2000: Notes proximity to Lough Corrib including the river crossing of the Grange River. Reminds the competent authority of their obligations under Article 6 of the Habitats Directive (92/43/EEC).

	• Annex 1 Habitat: Notes mapped Annex I Active Raised Bog [7110] within the northwest of the wind farm site, and floating track across the Annex 1 habitat Degraded raised bogs still capable of natural regeneration (7120). • Marsh Fritillary: Notes the presence of Marsh Fritillary in proximity to T5, and the potential for works to result in changes in hydrological regime of cutover bog (PB1) habitat and affect the suitability of habitat for Marsh Fritillary. • Bats: Notes location of T8 close to known common pipistrelle roost with high activity. In terms of bat mitigation, recommends using warm white lighting with a Correlated Colour Temperature (CCT) of below 2700 kelvins. • Notes the findings of the surveys in terms of roosts or breeding territories in relation to hen harrier, merlin, peregrine falcon, whooper swan, barn owl, kestrel, lapwing, swift, shoveler, buzzard, and long eared owl. • Golden plover: Notes the findings of EIAR and the national importance of the wind farm site for the wintering golden plover population and the predicted increase in annual mortality. Outlines that no analysis on the effectiveness of tethered bird control kites as a mitigation measure has been provide and queries the conclusion of no significant effects of collision risks.
Archaeology	• Note proximity to Recorded Monument. • Note the potential for sub-surface archaeological features as per the EIAR. • Condition: Recommend conditions relating to EIAR mitigation measures, CEMP, and pre-development archaeological testing, impact assessment and reporting. Noted to align with sample conditions C3, C5 and C6 of the OPR Practice Note PN03: Planning Conditions (October 2022).
Department of Defence (dated 22/10/25):	
Aviation	• Condition: All Turbines should be illuminated in accordance with Department of Defence specifications and in the event of negative impacts on future military radar systems, these should be mitigated.
Irish Aviation Authority (dated 07/10/25):	
Aviation	• Condition: Recommends standard aviation conditions including aeronautical obstacle lighting, as-constructed coordinates submission and notification of crane operations.
Inland Fisheries Ireland (IFI) (dated 20/11/25):	
Water Framework Directive Water quality Aquatic biodiversity	• Notes the primary concern of IFI is to protect the aquatic species and habitat, including water quality and the related riparian zone, and at all times the precautionary approach should be applied. • Notes that the subject site is located in the Clare River Catchment which includes Lough Corrib SAC, and within the Grange and Abbert River sub catchments.

	• Outlines the Water Framework Directive (2000/60/EC) requirements, and other environmental directives including the Fisheries Acts and the Local Government (Water Pollution) Acts. • The catchments support Atlantic salmon, brown trout and lamprey populations, and refers to significant fisheries works have been carried out to improve habitats for these species and other freshwater species within the Clare catchment. • Condition: Recommendations/observations include: – Pre- and post- construction aquatic biodiversity assessment with particular emphasis on fish of all watercourses. – Natural flow paths should not be interrupted or diverted in a manner that give rise to erosion or instability of soils. – Importance of sufficient retention time within settlement ponds required and for these to be maintained during operation, and of silt traps design. – Additional pressures on watercourses and interfering with the sustained flow of water should be avoided. – Consideration must be given to the runoff/leachate from any stockpiles. – Full containment of cement leachate, hydrocarbon oils and other toxic poisonous materials. – Avoid the use of sedimentary rocks in road construction. – No felling activity whatsoever should be carried out when soils are saturated or during/prior to forecasted periods of heavy rainfall for the area. – Approval of works by IFI at watercourse crossing required and notes methodology proposed negates the need for instream works. – Notes the EIAR should have referenced the 2016 IFI publication 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites'.
National Environmental Health Service (NHSE) (dated 03/12/25):	
Population and public health incl. methodology, water, shadow flicker and noise.	• Recommends population health approach when considering public health in terms of EIA applying a source-pathway-receptor model. Notes that the EIAR have assessed the areas identified in NEHS scoping response to the proposed development. • Construction: Considers that the proposed mitigation and monitoring measures provide adequate protection of Public and Environmental Health during construction. – Condition: Recommends altered construction hours and for dust minimisation measures to be continually implemented. • Water: Considers the EIAR taking account of mitigation measures demonstrates adequate protection of surface and ground water including drinking water during construction and operation. • Shadow Flicker: Recommends the condition in Draft 2019 Guidelines eliminating exposure to shadow flicker is implemented.

	• Operational Noise: Notes the predicted noise levels in Chapter 12 are below the 2006 Guidelines limits. – Comments on the noise limits within the 2006 Guidelines and specifically in relation to the acceptable change in the noise environment therein and this being highly likely to cause complaints, and the lack of evidence base to support the statement that a margin of 5dB(A) above background noise is not required necessary for the quite areas. – Outlines that the use of the absolute noise exposure limits set in the 2006 Guidance are resulting in a significant volume of complaints from communities exposed to noise from turbines post development. – Notes the importance of assessing the likely significant effects in the protection of public health. – Considers the WHO 2018 guidance to be the most appropriate criteria for assessing significance of the predicted noise. – Notes the HSE 'Position paper on wind turbines and public health' has been withdrawn and is under review. – Considers tabulation of the predicted change in the noise environment be the most informative way of reporting the likely effect of operational noise. – Refers to Webster/Rollo V Meenaclogher (Wind) Limited (2024 IEHC 136) in relation to private noise nuisance, consideration of other evidence and knowledge, and in relation to the 2006 Guidelines limits and protection of Public Health. – Notes the acoustic concerns relating to the Draft 2019 Guidelines relates to the assessment methodology and not the proposed standards set to protect health.
Office of Public Works (21/11/25):	
Cultural heritage	• Lists 9 no. National Monuments in state care within 21km of the proposed wind farm. Highlights Athenry Castle (NM406) as it includes a Visitor Service operation, c. 20km. • The closest is Abbey Knockmoy (NM 166), c. 6km and from which the wind farm is visible. • Notes that it is not apparent that an assessment of National Monuments in terms of ZTV analysis or baseline photographs from these sites including cumulative considerations have been carried out. • Request the submission of a verifiable visual impact assessment including cumulative impact from National Monuments.
Transport Infrastructure Ireland (TII) (dated 13/11/25):	
National Road Network	• Acknowledges that the proposed development can contribute to achieving the national target of renewable energy generation and reduction in greenhouse gas emissions. • Notes no direct access from the national road network required.

	• TDR accommodation works. – Recommends the applicant consults with relevant PPP Company, Motorway Maintenance and Renewal Contract contractor and local authority in relation to strategic road function. – Notes the proposed overrun area at N63/R332. Confirms that these works shall be temporary, shall be closed off when not in use, only facilitate turbine component delivery and thereafter reinstated on completion of construction. – Outlines that all works shall comply with TII publications and be subject to Road Safety Audit where warranted. All necessary licenses, approvals or agreements with the local road shall be in place prior to any development. Requirements for reinstatement of roads and in the event of damage to roads are outlined. – Requires full details of abnormal loads (>46 tonnes and <180 tonnes) and all Exceptional abnormal loads (>180 tonnes) to be agreed prior to commencement. Refers to relevant guidelines. • GCR: – Notes significant impacts to the N63 as a result of the GCR, 4.2km section. – Recommends full assessment of alternatives consistent with CAP 24. Requests that the Commission assesses the GCR to determine the 'optimal solution' results and considers official policy, reference to same included. Outlines that it is unclear why the loop in connection to the Cloon-Lanesborough line as considered at scoping was discounted.
Uisce Éireann (dated 17/11/25):	
Groundwater	• Notes T1 and T2 located within Mid Galway Public Water Supply (PWS) zone of contribution (ZOC), and the construction compound and c. 3.8km of the GCR are located within the Source Protection Area (SPA). • Notes depth to bedrock is variable but appears to be generally c.5 m with a reduction in depth to the south based on the GSI data. • Condition: Requests mitigation measures that are additional to those detailed within the EIAR for the protection of groundwater, including: – Agreement on dedicated refuelling area outside the SPA. – Details of geotextile liner to be recorded and logged on the risk register. – Employ consultant hydrogeologist and/or engineering geologist to monitor and supervise foundation and grouting works. – Agreement on the location of cement washout lagoons in hardstanding areas outside the SPA, these shall be lined and monitored. – Any run off from hardstanding areas shall be treated for settlement of suspended solids prior to discharge.

	– Requires groundwater monitoring downgradient of T1 and T2 and submission of monitoring results, both prior to and during construction. – The applicant/operator shall comply with the WFD and the River Basin Management Plan during construction and operation to ensure water quality is not negatively impacted. – The applicant/operator shall comply with the requirements of the EIA Directive 2014/52/EU, the requirements of Article 6(1) of the Groundwater Directive 2000/60/EC and with best practice Groundwater 'Protection Schemes set in the GSI Groundwater Protection Scheme.
UE Assets	• Outlines standard Uisce Éireann connection agreement and assets conditions.

4.4. Public Submissions

4.4.1. A total of 213 no. observations were received on the planning application, including 2 no. observations made by Councillors, 3 no. observations made by TDs and 1 no. observation from a Senator. All observations received are listed in listed in Appendix A.

4.4.2. The issues raised in the submissions are similar and in the I have grouped these into common themes in order to avoid unnecessary duplication and an excessively lengthy summary (Table 4.3). Of note, I have within the relevant sections of this report, where deemed necessary, expanded on the matters summarised below.

Table 4.3 Summary of relevant main points made in submissions by observers

Summary of main points	Location in report
Community Consultation and Engagement • The community consultation undertaken by the applicant was not sufficiently transparent or inclusive, did not include key community organisations, and did not meet the requirements of guidelines or the Strategic Infrastructure Development (SID) process.	Sections 9.6 & 10.3
Policy and Guidelines • The Coimisiún Pleanála must assess the application in accordance with National and EU Laws and Directives, and Court rulings.	Section 9.0

• The Wind Energy Development Guidelines 2006 are outdated and do not reflect the evolution of wind energy technology, including the increasing height of turbines, or scientific knowledge. • The proposed development materially contravenes the LARES wind energy zoning and associated objectives of the County Development Plan. • The proposed development does not comply with the objectives of the County Development Plan in respect of protecting landscape character, residential amenity, avoiding adverse environmental impacts, protection of water resources, the pattern of rural settlements, or the protection of natural heritage and biodiversity. • The Climate Act does not authorise the competent authority to rewrite the Development Plan on climate grounds. • The National Renewable Energy Action Plan 2010 and National Energy and Climate Plan 2021-2030, and 2006 Wind Energy Guidelines were not the subject of SEA.	
Population and Health Impacts • Changes to the environment in respect of noise, air, water, shadow flicker, electromagnetic fields, and traffic will cause significant health impacts. • The proposed development will cause depopulation of the area, which will impact on the community, schools, businesses, and sports clubs. • Noise, vibration, traffic, wake effects, and shadow flicker arising from the proposed development will hinder farm operations and impacts negatively on livestock and equine interests. • Loss of significant areas of agricultural land in the locality to renewable energy developments will impact on agricultural sector. • Shadow flicker will have significant health impacts on homes, schools and amenities. • The shadow flicker assessment is deficient, does not meet EPA EIAR Guidelines and relies on outdated thresholds.	Section 9.4 & 10.5
Biodiversity & Habitats • The proposed development will have a significant and permanent impact on biodiversity, including protected habitats and species.	Section 10.6, 10.7 & 11.0

• The bird surveys and modelling of impacts on birds is insufficient and inaccurate. • The proposed development will have a negative impact on bats due to collision risk, disturbance and loss of foraging habitat. • Mitigation measures proposed are inadequate. Mitigation in respect of Golden Plover is unproven. • The subject site and surrounding area are utilised by an extensive range of birds and other animals.	
Water Quality • The development will negatively impact on water quality at the Barnaderg/Gortbeg Group Water Scheme, Brierfield and District Group Water Scheme, and the Mid Galway Public Water Scheme. • The development is located in a highly karsified and hydrologically sensitive area, which facilitates transportation of pollutants to the abstraction points for the Public Water Supplies. • The application documentation lacks detailed hydrological modelling, thorough assessment of impacts arising during the construction phase of development, long-term water monitoring plan or remediation strategy. • The BESS and substation pose risk to public safety by way of water and soil contamination, and fire.	Section 10.9
Geology, Soils and Land • The development is located in a highly karsified and hydrologically sensitive area, which facilitates transportation of pollutants. • Deficient baseline assessment of peat and insufficient assessment of potential impacts on peat arising from extraction and hydrological disturbance. • The proposed development will have a significant adverse effect on Degraded Raised Bog. • The Applicant has failed to assess impacts on soil quality, including impacts on earthworks from subsurface vibrational noise.	Section 10.8
Noise	Section 10.12

• Noise arising from proposed Wind Farm development and future BESS is significantly above background levels and will have impacts on residential amenity and health. • High Court Cases have shown that accordance with noise guidelines does not prevent noise nuisance arising from Wind Farm developments. • The assessment of noise and vibration is insufficient and relies on incorrect and outdated noise standards. • Failure to assess infrasound, amplitude modulation, tonal noise, and low-frequency noise.	
Material Assets • Road closures, traffic diversion and increased traffic will impact negatively on residents, school buses, commuters, emergency services and farms. • Construction phase traffic will damage road infrastructure and give rise to a traffic hazard. • The application does not include sufficient information in respect of road design, drainage or traffic management. Key design and mitigation measures are left to post-consent stages. • Disruptions to utilities such as broadband and electricity will significantly affect residents. • The wind turbines will inhibit airborne emergency services and other aircraft and will impact on emergency services communications. • There are significant issues arising from renewable energy developments including costs to consumers and negative impacts on the national grid.	Section 10.15
Air & Climate Impact • The proposed development will damage Irelands ability to meet climate targets under the Climate Action and Low Carbon Development Act 2021 by generating carbon emissions through construction phase activities and releasing carbon stored in peat and forested lands. • The EIAR is deficient in respect of its assessment of air quality and carbon calculations. A full life-cycle emissions analysis has not been submitted.	Section 10.10 & 10.11
Landscape & Visual Impacts	Section 10.13

• The LVIA submitted is deficient in respect of the significance methodology adopted, landscape classification, underestimation of visibility, incomplete baseline assessments and cumulative impact assessments, and limitations in the Theoretical Zone of Visibility. • The proposed development will be visually intrusive and dominant, will overwhelm the rural character of the landscape, and will impact on views.	
Cultural Impacts • The application documentation does not refer to several features of historic and cultural heritage in the area including a former hedge school, burial plots, children's burial plots, a ring fort and a famine road • The proposed development will have significant impacts on undiscovered historical features and will erode the local history of the area through depopulation.	Section 10.14
Major Accidents and Natural Disasters • The EIAR falls to give a robust assessment of major accidents and natural disasters in respect of peat slides, peat fire, high winds, fire from lightning strikes, and flooding.	Section 10.16
Environmental Impact Assessment • The EIAR does not comply with the EPA EIAR Guidelines (2022), the EIA Directive (2014/52/EU as amended), and the Climate Action and Low Carbon Development Act (2021). • The EIAR contains incorrect and contradictory information, defers critical investigations and characteristics to post consent stages, does not provide sufficient decommissioning information, and fails to consider alternative renewable technologies. • Concerns regarding design flexibility and EIA.	Section 10.0
Appropriate Assessment • NIS contains significant gaps in its assessment of SPA birds, Annex 1 habitats, Annex II species, hydrological connectivity, and cumulative impacts. • Streams are the headwaters of the Clare River and hence supply sources for the Lough Corrib SAC.	Section 11.0, Appendix B.1 & B.2

• The proposed development will have significant negative impacts on water quality at the Lough Corrib SAC and SPA. Significant effects will occur at Lavally Lough SAC, Lakeview Lough SAC and Glenamaddy Lake SAC. • Reasonable scientific doubt remains as to the absence of adverse effects on site integrity, and the competent authority cannot lawfully rely on the NIS to conclude that the project will not adversely affect any European site.	
Other Matters • Letters of consent have not been provided where works are required to facilitate access to the site, along the grid connection route, or for passing bays on the public road. • The BESS should form part of the same planning application as the wind farm. Separation of the applications constitutes project splitting. • The proposed development would undermine the local community's rights to property ownership, to transfer or inherit property, to harvest turf, and to the peaceful enjoyment of their property and possessions. • The proposed development would undermine the local community's rights to property ownership, to transfer or inherit property, to harvest turf, and to the peaceful enjoyment of their property and possessions. • The development will cause the devaluation of property in the area and will disproportionately burden local residents. Wake • The proposed turbines do not meet the separation distances required under the 2006 Wind Guidelines. This will give rise to significant wake effects. • The development will cause the devaluation of property in the area and will disproportionately burden local residents.	Section 9.7 & 9.10

4.4.3. It should be noted that a few observations received include a number of incorrect development description and locational references which are not relevant to the Proposed Project. Where observations are of a general nature and could be considered of relevance to the proposed development, I have taken note of them in the summary of pertinent matters above. Where locational references have been provided and these clearly are not applicable to the Proposed Project, I have not

considered them further. I specifically note the reference to the application being premature pending the awaited updated guidelines for utility scale solar Instillation and reference to other wind farm developments within a 30km study area but referencing developments in counties such as Westmeath, Limerick, Cork, Kerry, Clare and Tipperary.

4.5. Applicant's Response to Submissions

4.5.1. The Chief Executives report, the submissions from prescribed bodies and public submissions have been circulated to the applicant for comment. The applicant submitted the Response to Report by Galway County Council report on the 13th February 2026 and the Response to Submissions report on the 27th February 2026 which responded to matters raised by observers and prescribed bodies. Of note, the Response to Submissions report (February 2026) appends technical notes or reports by Gavin & Doherty Geosolutions (GDG) on peat stability and karst risk assessment; by Hydro-Environmental Services (HES) on hydrogeology and hydrology; and, by TNEI on noise and vibration.

4.5.2. The applicant responses did not alter the proposed development. It is noted that the applicant, in the conclusions within both reports, confirms that the responses provided within these reproduce or reference the detail of the EIAR and the NIS and states that "there is no additional information provided that would be considered 'significant' or 'material'."

4.5.3. Having regard to this, I have in the below summary in Table 4-4 focused on areas where the applicant has provided further clarification or responses. I have combined these under key topics. I have not summarised the sections of the applicant's response where these restate the baseline, assessment, mitigations and findings of the EIAR.

Table 4.4 Summary of Applicant's Response to Submissions

Topic	Summary of response
Other matters	• Community Consultation: Outlines that local GAA clubs and schools were contacted by the project Community Liaison Officer, and that the statutory notices were placed in both the Irish Examiner and Connacht Tribune. • Planning history: Notes no change in EIAR baseline since the lodgement of the application identified.

	• Project Splitting: States that the proposed GCR will be subject to a separate application under Section 182 the 2000 Act as amended, and that no project splitting has occurred as the entirety of the Proposed Project has been assessed throughout the EIAR. • Turbine spacing: Outlines that the principle of the minimum separation distances as per the 2006 Guidelines and Draft 2019 Guidelines are in regard to adjacent wind farm sites. • Renewable energy: In reference to Wind Energy Ireland, Annual 2025 Report, notes that Irish wind farms provided one third of the island's electricity in 2024, and that the average price of electricity where comparatively lower on the days with the most amount of wind energy. • Community fund: Outlines the current terms and conditions of RESS. • Landowner consents: In response to R332 site entrance, confirms all applicable landowner consents submitted with the application. Notes that the GCR does not form part of the planning application. Outlines that GCR works carried out in the public road by a statutory undertaker do not require a letter of consent. • Development description: Notes that the grid connection underground cabling and onsite substation will form part of the electricity grid under the ownership and control of the ESB and EirGrid. Confirms that regardless of the final selected turbine model, the proposed development will have a total output in excess of 50MW. • Conditions: Notes conditions by the PA and provides responses to recommended conditions 15, 19 and 28.
Population and human health	• States that the submissions received in relation to human health impacts have not set out any clear and credible evidence. • Provides further literature review on human health impacts, specifically in reference to Autism Spectrum Disorder (ASD) and other neurodivergences. • Notes there has been no credible evidence provided that has shown a positive correlation between Wind Farms and rural depopulation. • Provides clarification on noise and dairy cattle farming in reference to research paper referenced by observers. • Notes the individual circumstances of the Webster/Rollo v Meenaclogher (Wind) Limited noise nuisance case are not comparable to the proposed development. • Provides additional literature in relation to 'vibroacoustic disease' or 'wind turbine syndrome' as referred to in observations.
Biodiversity	• EIAR figures: Includes Figures 6-1, 6-2, 6-4, 6-5, 6-6 of Chapter 6 and Figure 3-1 of Appendix 6-4 BMEP as these were not included in the in the submitted digital copy of the EIAR. All were available to view in the paper copy. • Bats: Outlines surveys at turbine height were not required to support the EIAR and that the static detector and transect survey programme is considered sufficient and proportionate. Outlines that T8 does not represent a unique activity hotspot in the context of overall site-wide bat activity

	patterns. Welcomes the recommendation to specify warm white lighting with a correlated colour temperature (CCT) of ≤2700K and commits to the Dark Sky Ireland lighting principles. Notes that there is no robust evidence that operational wind turbines emit ultrasonic sound at levels that interfere with bat echolocation or navigation. • Bog habitat: Provides additional clarification on the existing bog habitat within the site. Notes that the EIAR concludes that there will be no residual significant impacts on peatland habitats adjacent to the development footprint. • Earthworm: Notes that the habitats within the footprint of the proposed development are not highly suitable for earthworms.
Ornithology	• Bird surveys: Notes that the survey methods employed remain consistent and compliant with the updated guidance in NatureScot (2025). Acknowledges that bird detectability will decrease with distance, but notes that the survey viewsheds provided extensive coverage of farmland and peatland within 1km of the surveyor's location. Notes that the survey scope undertaken included the low light periods before sunrise or after sunset during the migratory/wintering season surveys. Nocturnal activity of birds recorded at the site has been accounted for within the collision risk model. Notes that surveys were targeted towards areas of suitable habitat where barn owl and hen harrier may be present. • Golden plover: Acknowledges that there has not been opportunity to test the effectiveness of tethered bird control kites in reducing collisions at wind farms. Notes that information collected during proposed bird monitoring will inform how this mitigation measure can be used in future. Includes a second run of the golden plover 'random' collision risk model with reduced input number of VP2 bird second. Outlines that the increase in the annual mortality of the county population has reduced from 12% to 3.6%, and the magnitude of the predicted collision risk is 'low'. • Whooper swan: Notes Horseleap Lough is located over 800m from the nearest turbines and that loughs and turloughs in the area were surveyed. • Farmland bird: Notes that conditions for farmland birds were described using the field data collected over multiple breeding seasons of survey, and that the report analysed 28 species of farmland bird from a variety of sources.
Land, Soils and Geology	• Notes that there is no equivalent guidance to the Scottish Government Best Practice Guidance (2017) within Ireland and that this guidance is considered best practice. • Highlights that were access was restricted, extensive peat surveys were carried out outside of these. Confirms that the presence of deeper peat pockets can exists, but that this would not have an appreciable impact on the peat stability risk in this case. Confirms that further inspection and testing at detailed design stage to verify the site conditions and parameters are standard.

	• Considers the value of 5kPa to be robust noting results recorded on site, experience and literature reviews. Notes steep peat cuttings of <1m generate low FoS but are generally considered low landslide risk. • Notes the susceptible to bog burst type failures are not fully qualified by the FoS calculation, as these are driven by hydrological factors and walkovers identified no evidence of significant bog burst features. Notes the design team shall develop their own inspection and testing criteria to satisfy and de-risk the possibility of peat landslides at these locations. • Confirms that the Karst Risk Assessment (Appendix 8-2) is limited to geotechnical risk and that hydrology and hydrogeology is considered in Chapter 9.
Hydrology and Hydrogeology	• Refers to the findings of the EIAR and concludes that given the local hydrogeological and hydrological regime, and following the implementation of proposed design and mitigation measures, no significant residual effects on the Mid Galway PWS/Barnaderg GWS sources will occur. • Outlines that the drainage measures detailed in Chapter 9 are tried and tested, best-practice mitigation measures for the protection of surface water and groundwater environment. • Acknowledges the additional requirements identified by UE in relation to mitigation measures and confirms that these can be implemented during construction, operation and decommissioning. Notes that all of IFI recommendations are addressed in the EIAR. • Outlines that the assessment presented in the EIAR clearly considers the hydrogeology of the area and the site-specific investigations carried out provided a sufficient level of information to inform the quantitative and qualitative impact assessment of the PWS and GWS. • States that the presence of proposed development within mapped SPAs/ZOCs for existing water supplies does not preclude development. • Provides further clarifications in relation to the EPA (2012) Source Protection Zone report for the Mid Galway PWS as raised in observations. • Notes that the Brierfield GWS was not assessed in the EIAR. Considers the findings of the impact assessment for the Mid Galway PWS and Barnaderg GWS directly applicable and concludes no significant effect on the Brierfield GWS.
Noise	• Outlines that nothing new have been identified in terms of the relevant noise impact assessment or planning context for a wind turbine development, and that the assessment has been carried out in accordance with recognised best science and the most up to date good practice. • Notes that nuisance and planning operate under different legal frameworks, and the application needs to be considered on its own merits. • Provides further clarification on the methodology within BS4142, WHO Guidelines (2018), Low Frequency Noise (LFN), and Amplitude Modulation (AM). • Provides clarification on the two staged assessment on the BESS as per BS 4142.

	• Restates the proposed construction hours the EIAR in response to NEHS.
Archaeology & Cultural Heritage	• Outlines that the mitigation measures in the EIAR are sufficient to address the requirement by DAU. • Notes that Abbey, Knockmoy (NM166) and Church, Abbert Demesne, Knockmoy (NM278) are within the 10km study area, and assessed in Appendix 14-2. • Includes updated copies of EIAR ZTV Figures 13-1, 13-9, 13-14 and 13-19. Notes that the coloured classification areas did not show in the submitted digital copy of the EIAR but were available to view in the paper copy. • Provides response to a number of historical sites referred to in observations.
Material Assets	• Acknowledges that an incorrect reference to R328 was made in Chapter 15 mitigation measures, and that the correct reference is R332. • Provides further clarification in relation to the road safety audit, site entrance along R332, and mitigation measures including traffic management and pre- and post-condition surveys of roads • Addresses road closures and diversion of traffic routes included in the TMP and confirms that the GCR will be fully within the public road corridor. • Notes that all axle loads of the abnormally sized vehicles will be within weight accepted limits. • Considers the July traffic counts to be valid in reference to peak traffic patterns within rural areas and the TII data on the N63 (at Derreen). • Notes that the site access on R332 is the focus of the assessment as this section of the delivery route will be under most pressure. • Considered that the issue of road capacity is adequately and robustly addressed in the EIAR.
Climate	• States the opportunity cost of grazing land is not significant and there is no significant change in landuse. • States that the submitted Decommissioning Plan (Appendix 4-6) have been fully assessed within the EIAR. This will be updated closer to the end of the operational period to reflect future relevant methodologies. • Notes both direct loss of peat and direct and indirect drying out of peat in terms of carbon losses, and that the calculations are precautionary as based on the entire proposed development footprint being in “Acid Bog”. • Notes that the proposed measures in relation to afforestation and planting, once established, will increase the carbon storage capacity of the proposed development. • Notes the TII Carbon Tool has been utilised in terms of potential carbon losses in regard to construction phase transport emissions and embodied carbon • Provides comments on the climate change risk assessments included in the Galway LACAP

4.6. Consideration of Response to Submissions.

4.6.1. The applicant's response to submissions was assessed on receipt to the Commission. It was noted that the response did not significantly amend the information in the original plans and particulars nor was there considered to be any new information of significance. The response provided either clarity or expanded on information in the original information submitted to address the issues of concern raised in submissions by prescribed bodies or the public.

4.6.2. The response included a soft copy of figures referred to in EIAR Chapter 6 Biodiversity and Appendix 6-4 Biodiversity Enhancement and Management Plan, and previously received by the Commission in the paper copy of the EIAR. These elements were not considered significant further information. It was, however, considered appropriate given the omission in the soft copy of the EIAR to circulate the applicant's submission to all participants of the application.

4.7. Further Submissions

4.7.1. On 5th June 2026, the parties of the application were invited to submit comments to the applicant's response to submissions, received on the 13th and the 27th February 2026.

4.7.2. Prescribed bodies

A submission was received from the Department of Defence (dated 22nd June 2026) which restated the comments received previously (see Section 4.3 above).

4.7.3. Public submissions

4.7.4. A total of 28 no. public submissions were received in respect of the Applicant's Response to Submission (listed in Appendix A). Many of the issues raised in the original submissions were reiterated. To avoid duplication, I have summarised the additional issues raised in Table 4.5 below. The consensus from the submissions is that the applicant has not adequately responded to the issues raised, that the responses are generic, that no additional technical information has been provided and that the applicant refers back to the application documentation.

Table 4.5 Summary of relevant main points made in submissions by observers

Summary of main points	Location in report
Community Consultation and Engagement • Insufficient evidence provided that sensitive receptors were adequately engaged with. • No evidence provided that public participation was not prejudiced by issues with digital version of application documentation.	Sections 9.6 & 10.3
Policy and guidelines • Site specific evidence is not provided to demonstrate that the development aligns with the Development Plan and LARES.	Section 9.0
Population and Health Impacts • Responses do not address site specific impacts on nearby residents or farms. • Mitigation measures are not preventative and will only be instigated when impacts have already occurred. The burden of initiating mitigation is placed on the affected party. • The applicant's Response does not state how moving livestock will be facilitated on local roads during the construction phase.	Section 9.4, 9.7 & 10.5
Biodiversity & Habitats • The current status of the bog, being partially degraded, does not justify further deterioration. • Mitigation relies on an ecologist employed by the Applicant. This represents a conflict of interest. • New planting cannot replace the ecological function of mature hedgerow. • The proposed development will hinder Irelands ability to comply with the EU Nature Restoration Law. • The distinction is not made on whether the BMEP and other habitat enhancements are mitigation measures or compensatory or enhancement measures. • Concerns are raised regarding the significance of ecological outcomes if habitat enhancement measures are ineffective. • Reliance on monitoring indicates that ecological outcomes are uncertain.	Section 10.6, 10.7 & 11.0

• Species specific concerns have not been addressed by the Applicant.	
Water Quality • There is no back-up plan for drinking water supply to the region if mitigation measures were ineffective. • References to abstraction from Lecarrow Stream are incorrect. The Mid Galway PWS draws from groundwater.	Section 10.9
Noise • Response does not address limitations in ETSU-based methodologies, uncertainty in predictive models, or site-specific impacts of AM. • The Applicants response does not make the distinction between measurable acoustic thresholds and human perception. • The Government is failing to engage with families affected by noise from existing and operational Wind Farms.	Section 10.12
Material Assets • Insufficient information on the timing of implementation of proposed mitigation.	Section 10.15
Landscape & Visual Impacts • The Applicants response relies on technical compliance rather than assessing impacts on the lived experience of residents.	Section 10.13
Major Accidents and Natural Disasters • Stating that the risk of fire is low does not confirm whether local emergency services are capable of responding to any fire that may occur at the site.	Section 10.16
Environmental Impact Assessment • The EIAR has not assessed the cumulative interaction between aspects of the environment. • The EIAR does not address scientific uncertainty where effects are stated to be insignificant. • Concerns raised regarding the credibility of the consultants and the robustness of the assessments undertaken.	Section 10.0

• The applicant's Response relies on professional opinions without sufficient evidential basis or quantitative analysis. • Limitation placed on the contents of the applicant's Responses by ACP meant that the applicant could not address deficiencies identified in the submissions.	
Other • Concerns have been raised regarding the impartiality of the Galway County Council report. • No information on who will be responsible for structures remaining at the site post-decommissioning of the wind farm. • Submissions outline the role and obligations of ACP in its independent assessment of the application, including the information provided in the Applicants Responses and submissions from Galway County Council and prescribed bodies. • The Applicant has provided no justification for not engaging with the research and findings presented in submissions. • The applicant has not provided any site-specific assessment of link between loss of residential amenity and property devaluation. • A financial institution has advised that the current wind farm application has caused a reduction in the value of the mortgage available for the construction of a dwelling with planning permission in proximity to the subject site.	Section 9.7 & 9.10

5.0 Oral Hearing

5.1. A majority of observations received made a request for an oral hearing. The issues raised in these submissions where broadly similar and summarised as follows:

- Opportunity for local residents, local families particularly those caring for children with additional needs, farmers and the wider community can give evidence directly on the impacts of the development on the local community.
- The gravity of defects and the severity of impacts on the local community.

- To address how the large number of issues will be addressed, monitored, made publicly available, and enforced.

5.2. A substantial amount of information was submitted with the application. In addition, the applicant responded to submissions on the 27th February 2026, as summarised in Section 4.5 above.

5.2.1. The Commission determined, by Direction dated 12th August 2026, that an oral hearing was not warranted in relation to the subject case, as it was considered that there was sufficient written evidence on file to enable an assessment of issues raised.

6.0 Planning History

6.1. Table 6.1 lists planning applications of relevance to the proposed development.

Table 6.1 Relevant Planning History

Relevant Planning History List
Subject Site: • Reg. Ref. 23119: Permitted (June 2023). Retention of 80m met mast, temporary permission for 5 years. • Historic and implemented permission relating to farms and dwellings within the application site boundary are noted under reg. ref. 07/1064, 06/1802, 97/7759. None of the conditions attached to these are of relevance to the subject development.
Other renewable energy developments (in the vicinity): • PL07.232902 (Ref. 08/2407): Operational. 2 wind turbines and associated development, referred to as Cloonlusk Wind Farm. • Ref. 13/1139 (as amended, ref. 201617): Operational. Single wind turbine and associated development, referred Clooncon East Singe Turbine. • Ref: 22/1175: Permitted (November 2023). Single turbine and associated development, known as Cloonascragh Single Turbine: • ABP-320089-24: Proposed. 11 no. wind turbines and associated development, known as Clonberne Wind Farm.
Other relevant and developments within the vicinity (wind farm site):

Summary of application for residential dwellings and relevant development within c. 3 km of the subject site (within the past 5 years):

- 21/38 – Permitted (03/05/2021) - Construct a dwelling house and associated development.
- 21/745 – Permitted (10/01/2022) - Construct a dwelling house and associated development.
- 21/989 – Permitted (06/09/2021) - Construct a dwelling house and associated development.
- 21/1217 – Permitted (06/12/2021) – Demolish Derelict house and construct a dwelling and associated development.
- 21/1496 – Permitted (22/11/2021) - Construct a dwelling house and associated development.
- 21/2098 – Permitted (11/04/2022) - Construct a dwelling house and associated development.
- 21/2022 – Permitted (23/05/2022) - Construct a dwelling house and associated development.
- 21/2066 – Permitted (25/07/2022) - Construct a dwelling house and associated development.
- 21/2198 – Permitted (29/08/2022) - Construct a dwelling house and associated development.
- 21/2216 – Permitted (07/03/2022) -Construct a dwelling house and associated development.
- 21/2473 – Permitted (30/05/2022) - Construct a dwelling house and associated development. Amended by Reg. 2561555.
- 21/2526 – Permitted (04/04/2022) - Construct a dwelling house and associated development.
- 22/261 – Permitted (18/07/2022) - Construct a dwelling house and associated development.
- 22/437 – Permitted (04/07/2022) - Construct a dwelling house and associated development. - Shane Fahy
- 22/624 – Permitted (10/10/2022) - Construct a dwelling house and associated development.
- 22/839 – Permitted (03/10/2022) - Construct a dwelling house and associated development.
- 22/60048 – Permitted (09/05/2022) - Construct a dwelling house and associated development.
- 22/60144 – Permitted (30/05/2022) - Construct a dwelling house and associated development.
- 22/60179 – Permitted (17/10/2022) – Demolish derelict dwelling and construct a dwelling house and associated development.

- 22/60190 – Permitted (06/06/2022) - Construct a dwelling house and associated development.
- 22/60862 – Permitted (21/11/2022) - Construct a dwelling house and associated development.
- 23/35 – Permitted (27/11/2023) - Construct a dwelling house and associated development.
- 23/209 – Permitted (21/08/2023) - Construct a dwelling house and associated development at site previously permitted under Reg. 22/437.
- 23/331- Permitted (20/05/2024). Construct a dwelling house and associated development.
- 23/61093 – Permitted (28/10/2024) - Demolish derelict dwelling and construct a dwelling house and associated development.
- 24/125 – Permitted (12/08/2024) - Construct a dwelling house and associated development.
- 24/60247 – Permitted (19/08/2024) - Construct a dwelling house and associated development.
- 24/60930 – Refused (18/09/2024) - Construct a dwelling house and associated development.
- 24/61029 – Permitted (11/11/2024) - Construct a dwelling house and associated development.
- 24/61421 – Permitted (25/11/2025) - Construct a dwelling house and associated development.
- 25/2 – Permitted (07/04/2025) - Construct a dwelling house and associated development.
- 25/113 – Permitted (13/01/2026) - Construct a dwelling house and associated development.
- 25/60314 – Permitted (19/08/2025) - Construct a dwelling house and associated development.
- 25/60413 – Permitted (15/07/2025) - Construct a dwelling house and associated development.
- 25/60438 – Permitted (19/08/2025) - Construct a dwelling house and associated development.
- 25/60667 – Permitted (02/09/2025) - Construct a dwelling house and associated development.
- 25/61070 – Retention Permitted (04/11/2025) – Retain relocated dwelling house permitted under Ref. 20/172.
- 25/61276 – Permitted (20/01/2026) – Construction of a sensory room - The Board of Management of Brierfield National School.
- 25/61392 – Refused (19/11/2025) - Construct a dwelling house and associated development.

- 25/61856 – Decision to Permit (20/08/2026) - Construct a dwelling house and associated development.
- 26/104 – Refused (02/07/2026) - Construction of a single dwelling and associated works.
- 26/60160 – Decision to Refuse (18/09/2026) - Construct a dwelling house and associated development.
- 26/60334 – Permitted (09/06/2026) - Construct a dwelling house and associated development.
- 26/60740 – Permitted (11/08/2026) - Construct a dwelling house and associated development.
- 26/60798 – Decision to Permit (23/08/2026) - Construct a dwelling house and associated development. Site of dwelling previously permitted under ref. 2461398
- 26/60811 – Permitted (11/08/2026) - Construct a dwelling house and associated development.
- 26/61548 – Live (Decision due November 2026) - Construct a dwelling house and associated development.

7.0 Policy Context

7.1. European and national legislation, policy and guidance

7.1.1. European policy considered relevant to the proposed development are listed in Table 7.1, and National policy documents considered relevant are listed in Table 7.2 below.

Table 7.1 Relevant European policy

RED III (European Renewable Energy Directive (EU/2023/2413))
RED III raised the overall renewable energy target from 32% to at least 42.5% at EU level by 2030, but it is aiming for 45%. This means almost doubling the existing share of renewable energy in the EU. The revised Directive sets out measures to further streamline administrative permitting and granting procedures for renewable energy developments including connection to the grid. RED III was transposed into Irish legislation, S.I. 274 of 2025 (as amended).
European Wind Power Action Plan
The RED III renewable target of at least 42.5% by 2030 will require the installed capacity to grow from 204GW (2022) to more than 500 GW by 2030. The plan identifies six pillars of concerted action including acceleration of deployment through increased predictability and faster permitting, improved auction design, access to finance, creating a fair and competitive international environment, skills and industry engagement and Member State commitments.

REPowerEU Plan 2022 and Directive EU 2018/2001 (as amended 18/05/2022)
This plan was prepared in response to the Russian invasion of Ukraine and focuses on the need to end the EU's dependence on Russian fossil fuels and to tackle the climate crisis. The plan amends the Directive on the Promotion of the Use of Energy from Renewable Sources (Directive EU 2018/2001) to require that 45% of energy is from renewable sources and includes the accelerated rollout of renewable energy.
European Green Deal 2020
The aim of this policy is to make Europe climate neutral by 2050. In 2021, the European Climate Law made greenhouse gas emission targets a legal obligation. These targets were increased from 40% to 55% by 2030.
Directive 2019/944 and Regulations EU 2019/941
There is an obligation on each Member State to monitor the security of electricity supply within their territory over the medium to long-term and each member state is entitled to set and monitor the level of security of supply deemed appropriate for its own needs.

Table 7.2 Relevant National legislation, policy and guidelines

Climate Action Plan (CAP) 2024 and CAP 2025
The purpose of the CAP is to lay out a roadmap to deliver on Irelands climate ambition, of 51% reduction in GHG emissions from 2021-2030 and net-zero emissions by 2050. The CAP aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022. CAP 2025 builds upon CAP 2024 by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings and it should be read in conjunction with CAP 2024. The Key Target for Onshore Wind is to achieve 6GW by 2025 and 9GW by 2030. It is noted that consultation has now closed on the next update to the Climate Action Plan, and that CAP 2026 it is planned for publication later this year.
Climate Action and Low Carbon Development Act, 2015, as amended
The Act commits Ireland to the objective of becoming a carbon-neutral economy by 2050, reducing emissions by 51% by the end of the decade. Section 17 of the Climate Action and Low Carbon Development (Amendment) Act, 2021 amends the principal act such that Section 15(1) requires: *"A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—* *(a) the most recent approved climate action plan,* *(b) the most recent approved national long term climate action strategy,* *(c) the most recent approved national adaptation framework and approved sectoral adaptation plans,* *(d) the furtherance of the national climate objective, and* *(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State."* "Relevant body" means a prescribed body or a public body

Energy Security in Ireland to 2030, Energy Security Package (November 2023)
Confirms that Irelands future energy will be secured by moving to an electricity-led system maximising our renewable energy potential.
National Energy Security Framework (April 2022)
Sets out the Governments response to the impacts of the war in Ukraine. It coordinates energy security work across the electricity, gas and oil sectors. Under 7.2, the Framework notes that prioritising renewables is in line with the requirements of the recast Renewable Energy Directive and the EC REPowerEU action statement.
Policy Statement on Security of Electricity Supply (November 2021).
This Statement sets out that ensuring energy security is a national priority, as the electricity system decarbonises towards net zero emissions.
Long-Term Strategy on Greenhouse Gas Emissions Reductions (April 2023)
The Strategy sets out that the transition to a climate neutral future, the pathway to decarbonisation must be underpinned by affordability and security in how we access and use energy. In the short-term, capacity shortfalls in the electricity system needs to be addressed and ensure adequate conventional generation is in place to support the elevated levels of renewable electricity being generated.
National Climate and Energy Plan 2021-2030 (NCEP)
Ireland's target to reduce greenhouse gas emissions increased from 40% to 55% by 2030. It refers to reaching 70% of energy from renewables by 2030, underpinned by the Renewable Energy Support Scheme. Energy security is a key priority.
National Planning Framework (NPF) First Revision (April 2025)
• National Strategic Outcome 8 Transition to a Carbon Neutral and Climate Resilient Society: sets out that for Ireland to meet its climate targets, reduce its greenhouse gas emissions, and improve its energy security by reducing reliance on imported fossil fuels and diversifying its electricity supply, an accelerated delivery of additional renewable electricity generation is essential to deliver 80% of Ireland's electricity needs from renewable sources by 2030. The need to develop enabling infrastructure including reinforce the distribution and transmission network to facilitate planned growth is recognised. Along with geographical focused renewables investments to minimise the amount of additional grid investment required, for example through co-location of renewables and grid connections. • National Policy Objective (NPO) 70: Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a climate neutral economy by 2050.

- NPO 71: Support the development and upgrading of the national electricity grid infrastructure, including supporting the delivery of renewable electricity generating development.
- NPO 72: Support an all-island approach to the delivery of renewable electricity through interconnection of the transmission grid.
- NPO 73: Support the co-location of renewable technologies with other supporting technologies and complementary land uses, including agriculture, amenity, forestry and opportunities to enhance biodiversity and promote heritage assets, at appropriate locations which are determined based upon the best available scientific evidence in line with EU and national legislative frameworks.
- NPO 74: Each Regional Assembly must plan, through their Regional Spatial and Economic Strategy, for the delivery of the regional renewable electricity capacity allocations indicated for onshore wind and solar reflected in Table 9.1, and identify allocations for each of the local authorities, based on the best available scientific evidence and in accordance with legislative requirements, in order to meet the overall national target.
- Table 9.1: Additional Renewable Power Capacity Allocations for the Northern and Western Region are 1,389MW for onshore wind by 2030 and 959MW for solar. The total national share for the region in 2030 is 35% of onshore wind and 12% of solar.
- NPO 75: Local Authorities shall plan for the delivery of Target Power Capacity (MW) allocations consistent with the relevant Regional Spatial and Economic Strategy, through their City and County Development Plans.

National Development Plan 2021-2030 (NDP)

The NDP sets out investment priorities underpinning the implementation of the NPF and Chapter 13 deals with NSO 8 Transition to a Climate-Neutral and Climate Resilient Society. Public capital investment choices must contribute to a 51% reduction in greenhouse gas emissions by 2030 and lay the pathway to achieve net-zero greenhouse gas emissions by 2050. This will require grid-scale renewable electricity generation and storage, supported by significant expansion and strengthening of the electricity transmission and distribution grid onshore and offshore.

National Biodiversity Action Plan 2023 – 2030 (NBAP)

The NBAP has a list of Objectives which promotes biodiversity as follows, Objective 1 Adopt a whole of government, whole of society approach to biodiversity; Objective 2 Meet urgent conservation and restoration needs; Objective 3 Secure nature's contribution to people; Objective 4 Enhance the evidence base for action on biodiversity; Objective 5 Strengthen Irelands contribution to international biodiversity initiatives. The Wildlife (Amendment) Act 2023 provides that every public body, as listed in the Act, is obliged to have regard to the objectives and targets in the National Biodiversity Action Plan.

National Landscape Strategy for Ireland 2015-2025

The Strategy will be used to ensure compliance with the European Landscape Convention and to establish principles for protecting and enhancing the landscape while positively managing its change. The Strategy is a policy framework which will inform and assist in the resolution of challenges arising from competing priorities when dealing with the landscape, and assist in the achievement of greater consistency in decision making. The Strategy will inform and assist in the resolution of challenges arising from competing priorities in the landscape, for example: infrastructural provision versus landscape protection, or local versus national objectives.

Wind Energy Development Guidelines - Guidelines for Planning Authorities (2006)
The 2006 Guidelines advise that a reasonable balance must be achieved between meeting Government Policy on renewable energy and the proper planning and sustainable development of an area and it provides advice in relation to the information that should be submitted with planning applications. The impacts on residential amenity, the environment, nature conservation, birds and the landscape should be addressed. The guidelines provides guidance on siting and design within the landscape, and identifies six landscape character type. The guidelines notes that it is common for wind farms to be located in one landscape character type but be visible from another, and that the entire visual unit should be considered.
Draft Wind Energy Development Guidelines (2019)
The 2019 Draft Guidelines propose several key amendments to the original document in relation to noise, visual amenity, shadow flicker and community engagement. The advice relating to siting, design and landscape are largely the same as the 2006 Guidelines. These guidelines emphasis that wind turbines in order to optimise wind resources are often located in elevated exposed locations, and that given their size and appearance wind turbines will be prominent within the landscape. It is stated that wind turbines cannot be "hidden", and that the most effective way of minimising landscape and visual impacts are through site selection, turbine type and positioning and layout. Underground grid connection is noted as the preferred and default approach, and considered to be the most appropriate environmental and/or engineering solution, particularly in sensitive landscapes where the visual impacts need to be minimised.
Electricity Transmission Infrastructure Development, Roads Sector Engagement Framework & Interim Guidance (February 2025)
Establishing effective and efficient ways of working together to deliver on CAP 24. Recognising the unique challenges presented by the accommodation of transmission network infrastructure in public roads. The Interim Guidance has been developed to assist in the delivery of the grid infrastructure rollout by the energy sector while also seeking to mitigate impact and ensure the continued proper management of the road network. Its purpose is to assist Road (Local) Authorities, in their role licensing road openings or making submissions to Planning Authorities, regarding the proposed placement of Medium or High Voltage electricity assets, including ducts, cables and associated infrastructure under public roads.

7.2. Regional Spatial and Economic Strategy

7.2.1. County Galway forms part of the Northern and Western Regional Assembly (NWRA). In this way, development at the subject site is guided by the NWRA Regional Spatial and Economic Strategy 2020-2032 (RSES). This document has been the subject of 2 no. monitoring reports, first the RSES Two Year Monitoring Report 2020-2022 and, most recently, the RSES Two Year Monitoring Report 2022-2024.

7.2.2. Under Section 'Renewable Energy and Low Carbon Future' the RSES sets out the ambitions of the region to contribute to achieving national targets for renewable

energy production. It is stated that the region has ample opportunity for growth in the renewable energy and clean technology sectors, and emphasis is placed on the creation of a low carbon economy in the region. Section 8.2 of the RSES states that the western region is rich in renewable energy resources and that there is significant potential for new energy outputs to the electrical grid. Stated challenges to growth include the new Wind Energy Guidelines, to replace the 2006 guidelines, and the provision of a fit for purpose transmission network. Relevant Regional Policy Objectives (RPOs) of the RSES are listed in Table 7.3 below.

Table 7.3 Relevant RSES Regional Policy Objectives (RPO)

Relevant RSES Regional Policy Objectives (RPO)	
RPO 4.16	The NWRA shall co-ordinate the identification of potential renewable energy sites of scale in collaboration with Local Authorities and other stakeholders within 3 years of the adoption of the RSES. The identification of such sites (which may extend to include energy storage solutions) will be based on numerous site selection criteria including environmental matters, and potential grid connections.
RPO 4.17	To position the region to avail of the emerging global market in renewable energy by: • Stimulating the development and deployment of the most advantageous renewable energy systems • Supporting research and innovation • Encouraging skills development and transferability • Raising awareness and public understanding of renewable energy and encourage market opportunities for the renewable energy industry to promote the development and growth of renewable energy businesses • Encourage the development of the transmission and distribution grids to facilitate the development of renewable energy projects and the effective utilisation of the energy generated from renewable sources having regard to the future potential of the region over the lifetime of the Strategy and beyond.
RPO 4.18	Support the development of secure, reliable and safe supplies of renewable energy, to maximise their value, maintain the inward investment, support indigenous industry and create jobs.
RPO 8.1	The Assembly support the development of a safe, secure and reliable electricity network and the transition towards a low carbon economy centred on energy efficiency and the growth projects outlined and described in this strategy.
RPO 8.4	That reinforcements and new electricity transmission infrastructure are put in place and their provision is supported, to ensure the energy needs of future population and economic expansion within designated growth areas and across the region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs. Ensure that development minimises impacts on designated areas.

7.3. Galway County Development Plan 2022-2028

7.3.1. The Galway County Development Plan 2022-2028 (henceforth the CDP) came into effect on the 20th June 2022. The CDP has been the subject of 1 no. variation, which largely relates to housing and, therefore, does not impact upon the subject development.

7.3.2. The subject site does not occur within any defined settlement under the CDP and is, therefore, considered rural for the purposes of this assessment. Section 4.7 of the CDP emphasises the key role of rural areas in both the identity and economic development of County. Relevant sections and policy objectives of the CDP summarised in Table 7.4 below.

Table 7.4 Relevant sections and policy objectives of the Galway CDP

Chapter 14 Climate, Energy and Renewable Resources & Appendix 1 County Galway Local Authority Renewable Energy Strategy (LARES)
• **CC 1 Climate Change:** The CDP seeks to support and facilitate the implementation of European, National and Regional objectives for climate adaptation and mitigation, and the CDP seeks to facilitate and support appropriate levels of renewable energy generation to meet national, regional and county energy targets as per **RE 1 Renewable Energy Generation and ancillary facilities**. **LARES Policy Objective (PO) 13 Wind Energy Generation**, seeks to increase renewable energy generation levels from wind energy developments in County Galway, given the recognised wind energy potential of the County. - **LARES Table 1:** indicates that the 'Wind Deployment Zones 2022' have the potential to yield 988MW of electricity through new development area and the repowering of existing wind farms within County Galway. • **CC 2 Transition to a low carbon, climate-resilient society:** Policy objective to support this transition by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency, and seeks to facilitate and support appropriate levels of renewable energy generation as per **RE 7 Renewable Energy Generation – Transition to a low Carbon Economy**. **LARES Policy Objective (PO) 3 Renewable Energy Generation**, seeks to facilitate and support appropriate levels of renewable energy generation in County Galway, in light of the need to transition to a low carbon economy and to reduce dependency on fossil fuels. • **RE 2 Local Authority Renewable Energy Strategy**: LARES' policy objectives and development management standards deemed the policy objectives and development management standards for the purpose of the CDP. • **RE 3 Wind Energy Developments**: The CDP seeks to promote and facilitate wind farm development in suitable locations, having regard to the areas designated for wind farms in the LARES, the 2006 Guidelines (or any updated/superseded document), the Habitats Directive, LARES' policy objectives and development standards. **LARES PO 14 National Wind Energy Guidelines,** sets out that all onshore wind energy

developments shall comply with the National Wind Energy Development Guidelines (or any subsequent version thereof).

- **RE 5 Renewable Energy Strategy**: The CDP supports and facilitates the sustainable development and the use of appropriate renewable energy resources and associated infrastructure within the County having due regard to the Habitats Directive and to the detailed policy objectives and Development Standards set out in the LARES.
- **EG 2 Electricity Transmission Networks**: Sets out that renewable energy generation project shall fully consider the capacity of the existing transmission grid network. **LARES PO 2 Renewable Energy Transmission**, sets out that proposed renewable energy generation projects shall fully consider the capacity of the existing transmission grid network.
- **LARES Vision and Part 3:**
  - **Vision:** "To facilitate and encourage renewable energy generation and a low carbon energy transition across County Galway, in the interests of future generations, through the application of energy efficient technology and the harnessing of indigenous renewable energy resources, whilst respecting the need to conserve areas of environmental, cultural and economic value."
  - **Section 5:** mapped factors listed for wind farm developments include landscape, electricity grid, wind speed, roads, coastal potential, population/setback distances, corine landuse, slope, flooding, landslides, and protected areas, and Section 9, Map 13: Wind Potential Map
  - **Map 15:** identifies the proposed wind employment zones in the County including Acceptable in Principle, Open to Consideration, Generally to be Discouraged, and Not normally permissible. The majority of the proposed development appears to be located within an Open to Consideration zoned area, whilst proposed turbines no. 6, 7 and 8, are located within a Generally to be Discouraged zoned area.
  - **Table 9 Open to Consideration**, are described as areas where wind energy development is likely to be favourable considered, subject to the results of more detailed assessment of polices and potential effects. These are middle scoring bracket areas from the combination of wind opportunity and sensitive weighting scores.
  - **Table 9 Generally to be Discouraged**, are described as areas where wind energy development is unlikely to be favourably considered on account of potential to adversely effect protected landscape, water, ecological resources and residential amenity. These are the lowest scoring bracket areas from the combination of wind opportunity and sensitive weighting scores.
  - **PO 16 Open to Consideration and PO 17 Generally to be Discouraged:** The LARES sets out that wind energy development proposals in both these areas will be considered in accordance with the LARES and the proper planning and sustainable development of the area.
  - The LARES sets out that for developments not located in an area identified as 'Strategic Areas' or 'Acceptable in Principle', the constraints and challenges detailed in Sections 5 and 9 are to be considered and addressed.
  - The LARES sets out that prospective developments should demonstrate how they will proportionately contribute to the requirement in the Climate Action Plan to generate 8.2GW of onshore wind by 2030.
  - **PO 36 Environmental and ecological assessments of renewable energy**: seeks to ensure that all developments are appropriately assessed with relevant environmental and ecological assessment under EU Directives.

Chapter 15 Development Management Standards

- **DM Standard 69 Wind Energy:** outlines guidelines which will be had regard to and lists local consideration (not an exhaustive list) which will be taken into account, as follows:
  - The Wind Energy Development Guidelines for Planning Authorities, DoEHLG, (2006) and any amendments to the Guidelines which may be made; and
  - The Local Authority Renewable Energy Strategy;
  - Impact on the visual amenities of the area;
  - Impact on the residential amenities of the area;
  - Scale and layout of the project, any cumulative effects due to other projects and the extent to which the impacts are visible across the local landscape;
  - Visual impact of the proposal with respect to protected views, scenic routes and sensitive landscapes (Class 2, 3 and 4);
  - Impact on nature conservation, ecology, soil, hydrology, groundwater, archaeology, built heritage and public rights of way;
  - Impact on ground conditions and geology;
  - Consideration of falling distance plus an additional flashover distance from wind turbines to overhead transmission lines;
  - Impact of development on the road network in the area; and
  - Impact on human health in relation to noise disturbance (including consistency with the Word Health Organisations 2018 Environmental Noise Guidelines for the European Region), shadow flicker and air quality;
  - Proposals for the decommissioning of the project following cessation of use or expiry of the permitted duration of use.

Other relevant DM standards listed in relevant sections below.

Chapter 4 Rural Living and Development

- **Section 4.13 Commercial Developments in Rural Areas:** The CDP acknowledges the importance of rural businesses and enterprises and the diversification of the rural economy including energy/renewable energy, recognises that a balance between supporting rural based enterprises and projects and protecting the local environment is required, and that there are instances where a development can be more readily accommodated or is more appropriate to a rural area, due to locational specific, or resourced based development, or a development of regional or national importance.

Chapter 6: Transport and Movement

- **PRP 1 Proposed Road Projects:** Table 6.1 Priority Transportation Infrastructure Projects for County Galway 2022-2028 lists N63 Annagh Cross to Ballygar. Table 6.2: Regional/Local Projects Proposed for 2022-2028 lists the R332.
- **NR 1 Protection of Strategic Roads:** The CDP seeks to protect the strategic transport function of national roads and associated national road junctions.
- **NR 4 New Accesses Directly on national Roads:** The CDP seeks to avoid the creation of any additional access point from new development to national roads to which speed limits greater than 60 kmh apply.
- **NNR 1 Restricted Regional Roads:** The CDP seeks to safeguard the capacity and safety of Restricted Regional Roads listed in Table 6.3, including R332 Tuam – Bearnaderg - Horseleap. Section 6.5.3.2 outlines that in order to maintain the efficiency and functionality of the regional road network it is important that the number of new accesses and the intensification of existing accesses are restricted.
- **NNR 2 Safeguard Regional and Local roads:** To safeguard the carrying capacity and safety of the County's regional and local road network.

- **Chapter 15**, development management standards of relevance:
  - DM Standard 27: Access to National and Other Restricted Roads for Commercial & Other Developments: This design standard lists the R332 as a Restricted Regional Road.
  - DM Standard 28: Sight Distances Required for Access onto National, Regional, Local and Private Roads
  - DM Standard 33: a) Traffic and Transport Assessment (TTA), Road Safety Audit (RSA) & Road Safety Impact Assessments (RSIA).

Chapter 8: Tourism and Landscape and Appendix 4 Landscape Character Assessment (LCA)

- **LCM 1 Preservation of Landscape Character:** Preserve and enhance the character of the landscape where, and to the extent that, in the opinion of the Planning Authority, the proper planning and sustainable development of the area requires it, including the preservation and enhancement, where possible of views and prospects and the amenities of places and features of natural beauty or interest.
  - **Map 8.1 Landscape Character Areas:** shows that the subject site and the northeast of the County is within the 'North Galway Complex Landscape', and within the North River Clare Basin Unit as per Appendix 4 LCA, Map 04.
  - **Appendix 4 LCA**, describes the North Galway Complex Landscape Type LCA as an extensive grassland plain which includes elevated areas, lakes, turloughs, raised bogs, wetlands and rivers. Land use patterns are stated to be mixed, and the character of the area is stated to change abruptly over short distances. It is stated that the areas around bogs have sky views that are free from light pollution. Sensitivities in the North Galway Complex landscape arise from the nature of the open countryside, which overs extensive views from elevated areas. The North River Clare Basin Unit is described as an extensive level plain with low enclosure, regular dry-stone walls, and extensive areas of bog.
- **LCM 2 Landscape Sensitivity Classification:** The CDP sets out that regard shall be had to the landscape sensitivity classification of sites and that this shall be balanced against the need to develop key strategic infrastructure to meet the strategic aims of the plan.
  - **Map 8.2 Landscape Sensitivity:** Identifies northeast of the County including the site, as a Class 1 - Low Unlikely to be adversely affected by change.
- **LCM 3 Landscape Sensitivity Ratings:** Consideration of landscape sensitivity ratings shall be an important factor in determining development uses in areas of the County.
- **PVSR 1 – Protected Views and Scenic Routes:** The CDP seeks to preserve the protected views and scenic routes as detailed in Maps 8.3 and 8.4 from negatively impact, and that this shall be balanced against the need to develop key infrastructure to meet the strategic aims of the plan.
  - **Map 8.3 Scenic Routes:** the closest scenic route is located near Oranmore, circa 26km to the west of the subject site.
  - **Map 8.4 Protected Views:** the closest protected view is Viewpoint 39 'Summerville Lough', circa 2.5 km to the east of the site and faces east over Summerville Lough from the R328. Protected View 42 'Glenmaddy Turlough' is circa 13km to the northeast of the site and faces south.

Chapter 7: Infrastructure, Utilities and Environmental Protection

- **WS 2 Protection of Water Supplies:** The CDP seeks protect, conserve and enhance all existing and potential water resources to ensure compliance with EU Regulations.
- **WS 7 Water Quality:** The CDP seeks to ensure no unacceptable impact on water quality and quantity as a result of new development.

- **WW 7 Sustainable Drainage Systems:** The CDP requires all development proposals to be accompanied by a comprehensive SuDS assessment including run-off quantity, run off quality and impacts on habitat and water quality.
- **EG 1 Enhancement of Electricity Infrastructure:** The CDP supports the expansion of the electricity infrastructure network subject to landscape, residential, amenity and environmental considerations.
- **EG 2 Delivery of Electricity and Gas Infrastructure:** The CDP supports the provision and extension of electricity infrastructure considered critical to the economic development of the County subject to environmental quality, landscape, wildlife, habitats or residential amenity.
- **EG 3 Power Capacity:** The CDP seeks to ensure adequate power capacity for the existing and future needs of the County.
- **AQ1 Ambient Air Quality:** Includes that all air emissions associated with new developments are within Environmental Quality Standards as set out in the Air Quality Standards Regulations 2011 (SI No. 180 of 2011) (or any updated/superseding documents).
- **NP3 Noise Impact Assessments**: The CDP requires an assessment of impact of the development on noise levels, having regard to the provisions of the Environmental Protection Agency Acts 1992 and 2003 and the EPA Noise Regulations 1994.
- **NP 4 Noise Pollution and Regulation:** The CDP restricts development proposals causing noise pollution in excess of best practice standards and regulate and control activities likely to give rise to excessive noise.
- **NP 5 Noise Mitigation Measures**: Require activities likely to give rise to excessive noise to install noise mitigation measures and monitors. The provision of a noise audit may be required where appropriate.
- **LP 1 Lighting Schemes**: All developments shall ensure lighting schemes are designed so that excessive light spillage is minimised.
- **SQ 2 Soil Protection Measures**: To ensure that adequate soil protection measures are undertaken where appropriate.

Chapter 10: Natural Heritage, Biodiversity and Green/Blue infrastructure

- **NHB1 Natural Heritage and Biodiversity of Designated Sites, Habitats and Species:** The CDP seeks to protect and, where possible, enhance natural heritage sites designated under EU and national legislation, and plants and animal species and their habitats identified under EU and national legislation, and the promotion of the development of a green/ ecological network.
- **NHB 3 Protection of European Sites**: The CDP sets out that no plans, programmes, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects.
- **NHB5 Ecological Connectivity and Corridors:** The CDP supports the protection and enhancement of biodiversity and ecological connectivity in non-designated sites where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive.
- **NHB 7 Mitigation Measures:** The CDP requires mitigating measures in certain cases where it is evident that biodiversity is likely to be affected.
- **NHB 9 Protection of Bats and Bats Habitats** The CDP seeks to protect bats and their roosts, their feeding areas, flight paths and commuting routes.
- **WR 1 Water Resources:** The CDP seeks to protect the water resources, including rivers, streams, lakes, wetlands, springs, turloughs, surface water and groundwater quality, as well as surface waters, aquatic and wetland habitats and freshwater and

water dependant species in accordance with the requirements and guidance in EU and national legislation and the basin management plans.

- **WTWF 1 Wetland Sites:** The CDP seeks protect and conserve the ecological and biodiversity heritage of wetland sites.
- **Section 10.9 Peatlands**, acknowledges the role of peatlands or bogs in controlling water levels in river catchments and as carbon sinks, and the impact on these functions when peatlands are drained and harvested or degraded, and references the National Peatland Strategy 2016. The use of the bogs for other purposes such as renewable energy can also be achieved in a compatible manner is also noted.
- **TWHS 1 Trees, Hedgerows, Natural Boundaries and Stone Walls:** The CDP seeks to protect and to retain important trees, tree clusters and tree boundaries, ancient woodland, natural boundaries including stonewalls, existing hedgerows particularly species rich roadside and townland boundary hedgerows, where possible and replace with a boundary type similar to the existing boundary.

Chapter 12: Architectural, Archaeological and Cultural Heritage'

- **AH 1 Architectural Heritage:** The CDP seeks to ensure the protection of the architectural heritage of the County, having regard to the Architectural Heritage Protection Guidelines 2011 (and any updated/superseding document).
- **AH2 Protected Structures:** The CDP seeks ensure the protection of structures including their curtilage and attendant grounds.
- **AH 3 Protection of Structure on the NIAH**: The CDP seeks to give regard to and consideration of all structures which are included in the NIAH for County Galway.
- **AH 4 Architectural Conservation Areas:** The CDP seeks to protect, conserve and enhance the special character of the ACAs.
- **AH 10 Designed Landscapes:** The CDP seeks to protect the surviving historic designed landscapes in the County and promote the conservation of their essential character, both built and natural.
- **ARC 4 Protection of Archaeological Sites:** The CDP seeks to protect archaeological sites and monuments their settings and visual amenity that are listed in the Record of Monuments and Places.
- **ARC 9 Recorded Monuments: "**Ensure that any development in the immediate vicinity of a Recorded Monument is sensitively designed and sited and does not detract from the monument or its visual amenity."
- **ARC 10 Zones of Archaeological Potential: "**To protect the Zones of Archaeological Potential located within both urban and rural areas and around archaeological monuments generally as identified in the Record of Monuments and Places..."
- **ARC 12 Archaeology and Infrastructure Scheme:** The CDP requires such developments to have regard to archaeological concerns when located in close proximity to Recorded Monuments and Places and their known archaeological monuments.
- **CHU1 Cultural Heritage:** The CDP seeks to protect the cultural heritage assets.

7.3.3. Galway County Heritage & Biodiversity Plan

The Galway County Heritage and Biodiversity Plan 2024 – 2030 provides a framework for the awareness, protection, conservation, promotion and management of heritage and biodiversity across the County, and a set of actions, objectives and key performance indicators to facilitate implementation of the plan.

8.0 Natural Heritage Designations

8.1. The subject site does not contain or immediately adjoin any designed sites. The closest European and nationally designated sites are listed in the Table 8.1 below.

Table 8.1 European and nationally designated natural heritage sites

Special Area of Conservation (SAC) (within 15km of the wind farm site)	**Approx. distance**
Lough Corrib SAC (Site Code 000297)	90m (north)
Derrinlough (Cloonkeenleananode) Bog SAC (Site Code 002197)	3.2km (northeast)
Levally Lough SAC (Site Code 000295)	3.2km (northwest)
Shankill Wet Bog SAC (Site Code 000326)	5.5km (northeast)
Carrownagappul Bog SAC (Site Code 001242)	8km (northeast)
Curraghlehanagh Bog SAC (Site Code 002350)	10km (northeast)
Monivea Bog SAC (Site Code 002352)	10km (south)
Lough Lurgeen Bog/Glenamaddy Turlough SAC (Site Code 000301)	11km (northeast)
Camberry Bog SAC (Site Code 002347)	13km (northeast)
Lisnageeragh Bog and Ballinastack Turlough SAC (Site code 000296)	14.5km (northeast)
Special Protection Areas (SPA) (within 25km of the wind farm site)	**Approx. distance**
River Suck Callows SPA (Site Code 004097)	20km (east)
Lough Corrib SPA (Site Code 004042)	23.5km (west)
Natural Heritage Area (NHA) (within 10km of the wind farm site)	**Approx. distance**
Derrynagran Bog and Esker NHA (Site Code 001255)	1.5km (northeast)
Derrinlough (Cloonkeenleananode) Bog NHA (Site Code 001254)	3km (northeast)
Killaclogher Bog NHA (Site Code 001280)	3km (south)
Lough Tee Bog NHA (Site Code 000307)	9km (south)
Proposed Natural Heritage Area (pNHA) (within 10km of the wind farm site)	**Approx. distance**
Summerville Lough pNHA (Site Code 001319)	2.5km (east)
Levally Lough pNHA (Site Code 000295)	3km (northwest)

Richmond Esker Nature Reserve pNHA (Site Code 000323)	3.5km (northeast)
Shankill Wet Bog pNHA (Site Code 000326)	5.5km (northeast)
Carrownagappul Bog pNHA (Site Code 001242)	8km (east)
Drumbulcann Bog pNHA (Site Code 000263)	7km (northwest)
Knockavanny Turlough pNHA (Site Code 000298)	8km (northwest)
Kilkerrin Turlough pNHA (Side Code 001279)	8.5km (northeast)
Tiaquinn Bog pNHA (Site Code 001709)	9km (south)
Monivea Bog pNHA (Site Code 000311)	10km (south)
Curraghlehanagh Bog pNHA (Site Code 00256)	10km (northeast)

9.0 Planning Assessment

9.1. Introduction

9.1.1. I have examined the application details and all other documentation on the file, including the submissions from prescribed bodies and the public and the applicant's response to the submissions. I have had regard to all relevant European, national and local policies and ministerial and other relevant guidance. I have inspected the subject site and the wider area.

9.1.2. Having regard to the requirements of the Planning and Development Act 2000, as amended, there are three parts to my assessment: planning and sustainable development, the Environmental Impact Assessment (EIA) and an Appropriate Assessment (AA) all detailed below separately in the individual sections. In each assessment, where necessary, I refer to the issues raised by all parties to the Commission in response to the application. In the interests of brevity, I have sought to avoid undue repetition where possible, instead indicating where overlaps occur.

9.1.3. I am satisfied the substantive issues for assessment relate generally to the principle of the development, environmental impact considerations, AA and matters arising from the observations received. Having regard to all the information, I consider the main matters for consideration by the Commission to be as follows:

- Section 15 of Climate Action & Low Carbon Development Act 2015, as amended
- Principle of the Development and Policy Context
- Residential Amenity
- Legal and other Matters

9.1.4. Matters arising in respect of EIA are addressed in Section 10 of this report. Matters arising in respect of appropriate assessment are addressed in Section 11 of this report.

9.2. Section 15 of Climate Action & Low Carbon Development Act 2015, as amended

Section 15(1) of the Act, as amended states:

> "A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—
>
> (a) the most recent approved climate action plan,
>
> (b) the most recent approved national long term climate action strategy,
>
> (c) the most recent approved national adaptation framework and approved sectoral adaptation plans,
>
> (d) the furtherance of the national climate objective, and
>
> (e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State"

9.2.1. As a relevant body, An Coimisiún Pleanála is required to exercise its function in a manner consistent with the applicable climate objectives, in so far as is practicable, and I have set out the following consideration to enable the Commission to make their decision within that framework.

9.2.2. As outlined in respect of policy at Section 7.1 above, CAP 2025 was published in April, 2025 and re-affirms the previous commitment in CAP 2024 to increase the share of renewable electricity generation to 50% by 2025 and 80% by 2030 including onshore wind targets of up to 9GWs by 2030.

9.2.3. There is clear support for the development of wind energy within this context. Ireland's long-term Climate Action Strategy, entitled Ireland's Long-term Strategy on Greenhouse Gas Emissions Reductions 2024, sets out indicative pathways, beyond 2030, towards achieving carbon neutrality for Ireland by 2050. The Strategy provides a pathway to a whole-of-society transformation and serves as a vital link between shorter-term Climate Action Plans and Carbon Budgets and the longer-term objective of the European Climate Law and Ireland's National Climate Objective.

9.2.4. The National Adaptation Framework; Planning for a Climate Resilient Ireland (June 2024), the most recent approved national adaptation framework, the National Adaptation Framework; Planning for a Climate Resilient Ireland June 2024 (NAF) is Ireland's second statutory National Adaptation Framework (NAF) and was published on 5th of June 2024. The NAF sets out the context to ensure local authorities, regions and key sectors can assess the key risks and vulnerabilities of climate change, implement climate resilience actions and ensure climate adaptation considerations are mainstreamed into all local, regional and national policy making. The NAF identifies 13 (previously 12) priority sectors under 7 lead Departments that are required to prepare sectoral adaptation plans under the Climate Act in accordance with the Sectoral Planning Guidelines for Climate Change Adaptation which were published in 2018 and updated in 2024 with 13 sectoral Plans prepared in 2025 including an Electricity and Gas Sectoral Plan.

9.2.5. It is noted that the furtherance of the national climate objective is a central tenet of the above referenced plans and strategies as is the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State. This national climate objective is reflected in the Galway CDP 2022-2028 (see section 7.3 above). Policy objective CC 1 'Climate Change' seeks to support and facilitate the implementation of European, National and Regional objectives for climate adaptation and mitigation, and Policy Objective CC 2 'Transition to low carbon, climate resilient society', seeks to support transition by 2050, by way of reducing greenhouse gases, increasing and facilitating renewable energy generation, and improving energy efficiency. I am satisfied that the proposed development accords with both the National climate objective and local climate action objectives.

9.3. Principle of the Development and Policy Context

9.3.1. The proposed development includes for 9 no. wind turbines with a total rated output of 54 to 64.8MW for 35 years which will be exported to the national grid.

9.3.2. As set out in Table 7.1 above, Irelands obligations under EU and international treaties are framed in the national climate objective under the Climate Action and Low Carbon Development Act, 2015, as amended. CAP 2024, as reaffirmed by CAP 2025, provides that a 75% reduction in emissions in the electricity sector is required by 2030 (based on 2018 levels). Central to achieving this is the strategic increase in the share of renewable energy to 80% by 2030, including ambitious targets of deploying 9GW of onshore wind.

9.3.3. The proposed development is compatible with national planning policy as set out in the First Revision National Planning Framework (NPF), 2018-2040 which recognises the need to move toward a low carbon and climate resilient society with a sustainable renewable energy supply. National Policy Objective 70 of the NPF seeks to promote renewable energy use and generation at appropriate locations in order to meet national objectives.

9.3.4. Such objectives and targets are also repeated at a regional policy level, Northern and Western RSES, which recognises that decarbonisation of energy can and needs to happen and that the region has a huge potential for growth in renewables, RPO 4.17 and RPO 4.18 are noted. The proposed development is compatible with regional planning policy set out in the RSES. Support for climate action, transition to low carbon and increase in renewable energy are also outlined at a local policy level, and in this regard, I note CDP policy objectives CC 1, CC 2, RE 1 and RE 7 as well as LARES policy objectives 3 and 13. It is important to note that the RSES and the CDP both predate the First Revision of the NPF (2025) and specifically NPO74, which allocates a 1,389MW of additional onshore wind capacity delivery target to the Northern and Western Region by 2030.

9.3.5. Whilst I note the regional commitment set out in RPO 4.16 and the work commenced on a roadmap for a Regional Renewable Energy Strategy in response to Action 102 of the CAP (RSES, Two-Year Monitoring Report 2022-2024), there are no amendments to the Northern and Western Region RSES currently in

response to NPO74. NPO74 would see an allocation of this target to Galway County Council, for which the County will require to plan for the delivery of as per NPO75. Whilst the Local Authority Renewable Energy Strategy (LARES, CDP, Appendix 1) predates the NPF (2025), it is noted that it indicates that the identified wind deployment zones in Map 15 have the potential to yield 874MW by 2030 from new wind developments. I further note that the potential yield is a substantial increase on the preceding 2015 Renewable Energy Strategy for the County.

9.3.6. As outlined in Table 7.3 above, the majority of the subject site, specifically turbines T1, T2, T3, T4, T5 and T9 are located within LARES' deployment zone for wind (Map 15), 'Open for Consideration'. Whilst turbines T6, T7 and T8, are located within the 'Generally to be Discourage' deployment zone for wind. No part of the subject site is located within areas zoned as 'Acceptable in Principle' or 'Not normally permissible'.

9.3.7. Policy objective RE 1 seeks to increase renewable energy generation levels from wind energy developments in County Galway and RE 3 seeks to promote and facilitate wind farm development in suitable locations, having regard to the areas designated for this purpose in the LARES and the policy objectives in the LARES. The LARES confirms that the MAP 15 deployment zones are to be considered in conjunction with the policy objectives. The applicable PO 16 and PO 17 set out that wind energy development proposals within the 'Open to Consideration' and 'Generally to be Discourage' zones will be considered in accordance with the LARES and the proper planning and sustainable development of the area. As such, there is no variation in the policy tests applicable to 'Open to Consideration' and 'Generally to be Discouraged' zones.

9.3.8. The distinction between 'Open to Consideration' and 'Generally not Permissible' is noted to be drawn from the wind opportunity and sensitive weighting scores received during the consideration of the mapped factors listed in Section 5 (Part 3) of the LARES. Noting that a middle scoring corresponds with 'Open to Consideration', described as an area "where wind energy development is likely to be favourable considered, subject to the results of more detailed assessment of polices and potential effects." A lower score, corresponding with 'Generally not Permissible', is described as an area "where wind energy development is unlikely to

be favourably considered on account of potential to adversely effect protected landscape, water, ecological resources and residential amenity."

9.3.9. I have reviewed the deployment zones across the subject site and considered only the mapped factors detailed within the LARES. Having regard to these, there are no apparent differences in the sensitivity factors across the subject site, and I note the sensitivity weighted overlay for the subject site is largely the same (category >=5 and <20). There are, however, some variances in the wind opportunity weighted overlay across the subject site, although the LARES outlines that lower priority was given to wind speed as a location factor to take account of improving technology. MAP 17 and 18 of the LARES provides a comparison with the County Galway Wind Farm Designation Areas 2015, and of note, is the location of the entire subject site within the former 'Open to Consideration' area.

9.3.10. Considering the above, I am satisfied that the LARES 'Open to Consideration' and 'Generally to be Discouraged' deployment zones where applicable to the subject site are subject to the same sensitivity overlay and the same policy test within the CDP and the LARES. There are no policy tests within the CDP or the LARES that restricts wind farm development within the 'Generally to be Discouraged' deployment zones.

9.3.11. Similarly, it is noted that Galway County Council in their Chief Executive Report, having regard to Policy Objectives RE3, RE5 and RE7 which promotes and facilitates wind farm developments in suitable locations and having regard to the areas designated for this purpose in the LARES, considered the principle of the proposed development acceptable subject to the assessment of the proper planning and sustainable development considerations set out in the assessment above.

9.3.12. The majority of observer have raised concerns that the Proposed Project materially contravenes the CDP and the LARES by reason of the three turbines being located within the 'Generally to be Discouraged'. Additional concerns raised by observers with respect to a high concentration of windfarms development in the north and east of Galway are also noted. Observers raise concerns in respect of potential effects on the electricity supply and curtailment from wind farm developments and high electricity costs are noted.

9.3.13. In response to these concerns, I am guided by the Climate Action Plan 2024 and 2025, and by National, regional policy outlined in Sections 9.2 and 9.3 of this Inspector's Report, and local policy outlined in Section 9.4 summarised in section 10.3.6 above, which all point favourably to the principle of windfarm development at the location proposed, subject to necessary environmental and habitats assessments. These environmental assessments are undertaken in sections 11.0 and 12.0 of this Inspector's Report.

9.3.14. Overall, I am satisfied that the proposed development is consistent with the Climate Action Plan 2024 and 2025, and with National, regional and local policy.

9.4. Residential Amenity

9.4.1. Observers raise concerns regarding omissions of existing and permitted dwellings and local schools from the assessments, wind turbine setback from dwellings and impact on residential amenity as a result of the proposed development. I have addressed these under the main topics below and made reference to the EIA in Section 10.0 where applicable.

9.4.2. Sensitive residential receptors

The applicant has identified sensitive receptors within a 1.62km shadow flicker study area of the proposed turbines in Figure 5-3 of the EIAR and which extends out to a 2.5km noise study area in EIAR Appendix 12-2, Figure A1.1A to Figure A1.1f. I have reviewed these and note that the permitted dwellings under planning reference 25/60413 and 22/839, as referred to in observations, are both identified as sensitive receptor by the applicant, Nos. 23 and 4 respectively. I also note that both Briarfield School and Cooloo National School, also referred to by observers, are included as sensitive receptors Nos. 126 and 217 in the EIAR, respectively. Barnaderg National School is located outside the sensitive receptors study area.

One observer references a dwelling within 200m of the proposed site entrance, although no specific locational details have been provided. I have reviewed the above mentioned sensitive receptors study areas, and I am satisfied that existing habitable dwellings within the study area, and in proximity to the proposed site entrance, have been comprehensively covered. At the time of writing, there are a

number of permitted and proposed dwellings across the study area which postdates the application (see Section 6.0 above) and as such, are not included in the applicant's sensitive receptors list. I am, however, satisfied that these additional permitted or proposed dwellings are all located adjacent to identified sensitive receptors in the EIAR and which can reasonably be considered representative of the additional residential properties.

The omission of a dwelling (location Eircode H53 FF64) has been referenced by observers. I note this dwelling is located outside both the application boundary and the submitted blue landowner boundary, and is approx. 510m from proposed turbine T05, approx. 526 m from T04 and approx. 600 m from T08. During my site visit, I noted that the dwelling appears to be to be occupied. From my review of the planning application documentation, I can confirm that the dwelling is not identified by the applicant as a sensitive receptor or as a participating or involved dwelling. In this regard, it is worth noting, that no participating or involved dwellings have been identified within the sensitive receptor study area. Whilst I note the reference in Chapter 1 (Section 1.4) to a currently occupied property located approx. 525m from the nearest proposed turbine and that "an agreement is in place with the occupant such that the property will be vacant at the time of commissioning of the Proposed Wind Farm", no figures identifying this involved property and written evidence demonstrating such an agreement have been submitted with the application. The Commission will note the applicant was given the opportunity to respond to submissions, however, the submitted response does not address or include any further clarification or update information pertaining to sensitive receptors or involved properties. In my view, the status of this dwelling as either an involved property or a sensitive receptor can, as such, not be confirmed and I have addressed this further in Sections 10.5 and 10.12 below.

From my site visit, I note there is a dwelling not identified as a sensitive receptor by the applicant located approx. 840m from T08 and across the road from sensitive receptor No. 26. The overgrown appearance of the front garden and access constraints were noted, and it is most likely that the dwelling is vacant although its habitable condition is unknown. I am satisfied that sensitive receptor No. 26 can reasonably be considered representative of this dwelling. Furthermore, I note Elmhill House, which is located within the application boundary and in proximity to

T08 (approx. 150m), is within the control of the applicant, vacant and in an uninhabitable condition (Structure 9, EIAR Appendix 6-2 Bat Survey Report).

Having carried out review of sensitive receptors within the study area including planning history in the vicinity of the subject site as per Section 6.0 above, and I am satisfied, at the time of writing, that no additional sensitive residential receptors other than those considered above have been identified.

Further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

9.4.3. **Setback from residential property**

There is no minimum setback distance within 2006 Guidelines. The applicant outlines in Chapter 5, Section 5.7 of the EIAR that all involved properties achieve the minimum distance of 500m from any proposed turbine location as per the Draft 2019 Guidelines. It is further noted that the proposed turbines meet the recommended setback of the Draft 2019 Guidelines of 4 times the tip height to all sensitive receptors, in this regard 720m (4 x 180m, maximum tip height).

As outlined in the previous section, there is one inhabited dwelling located between 510m and 600m from proposed turbines T05, T04 and T08 and on that basis, these specific turbines meet the minimum setback distance of 500m but do not meet the recommended setback of the Draft 2019 Guidelines. A lower setback where there is agreement with owners and occupiers, and subject to compliance with noise limits, are provided for in Section 6.18.2 of the Draft 2019 Guidelines. This exception, however, requires the "relevant parties to provide written confirmation to the satisfaction of the planning authority that they have agreed to a reduced setback and have no objection to the proposed wind energy development." This has not been submitted by the applicant and interested parties.

One observation has queried the setback distance between proposed turbine T01 and the permitted dwelling under planning ref. 22/839, also referred to as sensitive receptor No. 4 in the EIAR. Having reviewed the permitted drawings (ref. 22/839), I am satisfied that the location of sensitive receptor No. 4 as show in the EIAR reflects the permitted plot.

It is important to note that the Draft 2019 Guidelines outlines that "determining setback distance is but one component requiring consideration in determining the appropriateness of a particular project", and that wider considerations outlined within the Draft 2019 Guidelines must also be taken into account. I have addressed such wider considerations below.

9.4.4. **Visual residential amenity**

I note the 2006 Guidelines provide guidance on the appropriate setting and design of turbines. I note the location of dwellings in the vicinity of the turbines and the associated terrain, which I have considered in more detail in Section 10.13. I conclude therein that there is the potential for a small number of residential properties located within c. 3 km to experience significant visual effects where these will experience uninterrupted primary views of the proposed wind turbines. I do not consider, taking account of turbine setbacks and screening provided by vegetation, buildings and local topography, that the proposed development, individually or cumulatively, would dominate the visual amenity of these properties.

9.4.5. **Shadow Flicker**

I have addressed matters relating to shadow flicker in Section 10.5 below, and I conclude that with the application of mitigation, there will be, as far as reasonably possible, no shadow flicker on sensitive residential receptors, individually or cumulatively, as a result of the proposed development.

9.4.6. **Noise**

I have addressed noise in Section 10.12 below. Operational noise can be controlled by noise limits, and I am satisfied that the predicted noise levels, individual and cumulatively, subject to mitigation measures, will not exceed applicable noise limits at identified sensitive noise receptors. Exceedance of operational noise limits is concluded for the additional sensitive receptors, located approx. 510m from proposed turbine T05, however I am satisfied that operational noise can be controlled through the application of mitigation measures. The extent of operational curtailment and mode management required is not known at this stage.

9.4.7. **Conclusion**

Considering the above, I am satisfied that the assessment submitted by the applicant is sufficiently comprehensive to conclude on residential amenity impacts. Having regard to the location of the subject site, the setback of proposed turbines to residential receptors, and the mitigation measures involved during the construction and operational phases, I am satisfied that the proposed development would not lead to significant negative impact on the residential amenity of the occupiers of properties in the vicinity of the subject site. I do not agree with submissions that reaching this conclusion would interfere with European Convention on Human Rights – Article 8 or Constitutional rights to own, enjoy and inherit property.

On balance, based on National Policy supporting renewable energy (see Section 7.0), I consider that the potential benefits associated with renewable energy generation including wind energy within the context of a climate emergency, outweigh the potential perceived adverse visual effects for a small number of residential receptors. I am, therefore, satisfied that the proposed development would be consistent with the Climate Act and National Policy in support of renewable energy and a refusal of permission would not be warranted on the basis of residual visual effects on residential receptors.

9.5. **Restricted regional roads**

9.5.1. The Roads Department state that the Proposed Project is contrary to Policy Objective NNR2, DM Standard 28 and 33a of the CDP, and considers that the proposed development works would interfere with the safety and endanger public safety by reason of traffic hazard or obstruction of road users or otherwise and therefore would be contrary to the proper planning and sustainable development of the area. Concerns relating to access from restricted roads have been raised by observers.

9.5.2. Having reviewed the text of NNR1, DM 27and DM 28, which relate to new accesses onto national and restricted regional roads, and I do not consider that the proposed construction phase entrance onto the R332, owing to its temporary nature and supervised operation, strictly meets the definition of a new entrance in this part of

the Development Plan. On this basis, I do not consider that the proposed development contravenes policy objective NNR1, NNR 2, DM 27 or DM 28.

9.5.3. I have assessed road capacity, obstruction and road safety in Section 10.15 below, and I am satisfied that the applicant has adequate demonstrated that the proposed development would not result in significant adverse effects on the road network, user of the road network or otherwise, and that effects on the road network will be temporary and will be mitigated and managed as per measures detailed in the EIAR. I have reviewed the sightlines and forward visibility for the proposed entrance on the R332, and having regard to the temporary nature of the access, its use and mitigation measures, I am satisfied that the applicant has demonstrated compliance with TII publication (DN-GEO-03060).

9.5.4. Regarding the requirements of DM 33a, I am satisfied that the assessment in the EIAR, having regard to sub-threshold criteria, has been carried out in accordance with TII publication Traffic and Transport Assessment Guidelines (PE-PDV-02045, May 2014). I have reviewed the TII's Road Safety Audit (GE-STY-01024) and the Road Safety Impact Assessment criteria outlined in the CDP and note that these are applicable to new road schemes or permanent changes to national roads. On the basis that the proposed construction phase entrance is temporary in nature, I am satisfied that these provisions are not applicable to the proposed development. I, therefore, do not consider the proposed development to be contrary to policy objective NNR 2 or DM standard 33a as outlined by the Roads Department.

9.6. Consultation

9.6.1. The majority of observations received consider pre-application consultation in relation to the proposed development to be inadequate. Section 2.8.2 and Appendix 2-2 off the EIAR outlines the consultation undertaken, and I have considered this in Section 10.3 below, where I conclude that I am satisfied that appropriate pre-application consultations have been carried out and that observers have had the opportunity to comment on the proposed development in advance of decision making (refer to Section 4 above). The information presented in the EIAR complies with the Aarhus Convention.

9.6.2. I do not agree with the observers that reaching this conclusion would interfere with Article 1 of Protocol No. 1 of the European Convention on Human Rights.

9.7. Impact on property values

9.7.1. A number of submissions raises concerns regarding impacts on property values in the vicinity as a result of the proposed development and some have raised concerns relating to the value of farmlands. I have addressed submissions relating to bovine and equine interests in Section 10.5 below, and have not repeated it herein.

9.7.2. The reference by a number of observers to the experiences of a local auctioneer in selling a house in Co. Mayo near wind turbines is noted, however the individual circumstances are unknown and not of relevance to the proposed development.

9.7.3. The applicant has submitted a consideration of potential impact on property values in Chapter 5 of the EIAR and further addressed the matter in the Response to Submissions. Whilst I note concerns raised by observers in terms of the relevance and methodology of the studies referred to by the applicant, I am satisfied that the these provides a reasonable overview of relevant and well-known international studies including the Irish working paper by the Centre for Economic Research Inclusivity and Sustainable (CERIS, 2023), “Wind turbines and house prices along the west of Ireland”. I note a large majority of submission including the Cooloo Collective submission, have also referred to the CERIS working paper (2023).

9.7.4. I note the CERIS (2023) working paper, based on a small sample of houses, concluded a potential decrease in property values within 1km of a wind turbine, but that these were not persistent and diminished over the operational lifetime. The study did not identify any significant reductions in house prices beyond 1km. I concur with the applicant that further research is needed before drawing firm conclusions, noting the limited dataset (225 houses) and the working paper status.

9.7.5. I am aware that there are a number of international studies available with regard to this topic and that conclusions within these vary. The applicant refers to the 2009 and 2013 studies by the Lawrence Berkeley National Laboratory (LBNL) which found no statistical evidence that home prices near wind farms were affected. A

study commissioned by the RenewableUK (2014), and carried out by the Centre for Economics and Business Research, found no negative impact on property prices. The Climate Exchange (2016) “Impact of wind turbines on house prices Scotland” study found no evidence of a consistent negative effect on house prices. A more recent US study “Commercial wind turbines and residential home values: new evidence from the universe of land-based wind projects in the United States” (Energy Policy Journal, 2023) found that decline in property values recovered post construction.

9.7.6. Overall, it has not been demonstrated with certainty, that the presence of the proposed wind farm will directly result in an attributable depreciation of property or land values in the vicinity. In reaching this conclusion, I have also had regard to the rural and sparsely populated character of the local area, no impact on existing property access/ works on adjacent lands, and the setback distance to residential properties, together with the amenity considerations as considered in the preceding section and that there will not be any significant harmful impact upon adjacent occupiers.

9.7.7. As above, I do not consider the provisions under the Fourth Schedule ‘Reasons for the Refusal of Permission which Exclude Compensation’ of the 2000 Act, as amended, specifically 10.(c), “ seriously injure the amenities, or depreciate the value, of property in the vicinity", as referred to by observer, to be applicable in this instance. Furthermore, I do not agree with the observers that reaching this conclusion would be inconsistent with the provisions of Article 40 Personal Rights of the Constitution of Ireland.

9.8. Community Benefit Fund

9.8.1. Observations have raised concerns regarding the community benefits. I note a mandatory Community Benefit Fund (CBF) under RESS or a voluntary community benefit scheme will be provided by the applicant as per section 5.10.3.1.2. of the EIAR. The proposed development is noted to have the potential to generate a CBF estimate at 300,000 per annum for 15 years. The applicant proposes to form a benefit fund development working group representing close neighbours and local

communities. I am satisfied that a standard approach to CBF is proposed. In the event the Commission in minded to grant consent, a CBF should be conditioned.

9.9. Turbine Scale and Layout

9.9.1. Turbine scale and output

Observations have raised concerns regarding turbine dimensions and scale, design flexibility and that these larger turbines are untested in respect of visual, environmental and amenity impacts. The applicant's consideration of turbine numbers and model are outlined in Chapter 4 of the EIAR. In regard to turbine scale, I note that larger turbines of a tip height of 180m or higher are common to the onshore market and have been permitted onshore in Ireland in more recent years. My EIA as set out in Section 10.0 takes account of the scale of the proposed turbines.

Observers raise concerns that the proposed development does not meet the output requirement for SIDs threshold owing to errors in calculating the output of the proposed development. As above, the Commission confirmed that the proposed development constitutes SID under ABP-316466-23. The proposed maximum generating capacity is between 54 to 64.8 MW and the applicant's Response to Submission confirms the proposed development will have a total output in excess of 50MW meeting the relevant threshold set out in the Seventh Schedule of the 2000 Act.

I have addressed concerns regarding design flexibility in Section 10.3.4 below.

9.9.2. Turbine layout

Observers have raised concerns regarding the proposed layout, specifically that the turbine to turbine separation distances do not accord with the minimum distances in the 2006 Guidelines and concerns regarding potential wake effects and energy yield. Concerns regarding wake impacts on other wind farms have also been raised. There are also concerns raised regarding the impact on turbine manufacturing warranty when considering lack of spacing and impact on energy efficiency. The

observation made by Con Shehan is referred in the submission by the East Clare Environment Group in this regard.

The 2006 Guidelines, para. 5.13, addresses windtake and minimum separation distances between turbine, however this is specifically in reference to the wind farm development potential of adjoining sites including permitted wind farm sites. Of note, the Draft 2019 Guidelines, para. 4.9.6 Windtake restates the advice within the 2006 Guidelines in this regard. I am satisfied that separation distances outlined with para. 5.13 of the 2006 Guidelines are not applicable to the spacing of turbines within a proposed wind farm.

The 2006 Guidelines, and the Draft 2019 Guidelines, apply the following principles to turbine separation distances to adjoining sites: “to ensure optimal performance and to account for turbulence and wake effects, the minimum distances between wind turbines will generally be three times the rotor diameter (=3d) in the crosswind direction and seven times the rotor diameter (=7d) in the prevailing downwind direction.” I am satisfied that there are no adjacent cumulative wind farm developments to the proposed development within these separation distances.

Whilst I note the SEAI Community Energy Resource Toolkit: The Planning Process (2024) as referred to by observers, I do not consider the toolkit relevant to a commercial wind farm development. Furthermore, the toolkit does not provide any additional advice on turbine spacing given it restates the above advice from the 2006 Guidelines within the context of planning feasibility, identifying sites (Section 3.1) and adjacent infrastructure.

In terms of the design process relevant to the proposed development, I note the applicant in their Response to Submissions outlines that this is described in Chapter 3 of the EIAR. That the layout has taken account of constraints, buffer zones, separation distances and been informed by the result of noise and shadow flicker assessment. I further note Section 3.5.2 of the EIAR refers to the optimisation of the layout design and that regard was had to windtake and the separation distance to be maintained between turbines. Having reviewed the layout, all turbine separation distances exceed 3 rotor diameters, and some exceeds seven rotor diameters at the maximum 162m rotor diameter. The prevailing wind is noted to be from the westerly and south westerly as per Met Eireann data for stations in Claremorris and

Athenry. The applicant has not provided any detail with regard to wind analysis or indicated any minimum spacing approach in relation to the design optimisation process.

Advice on the spacing of turbines within a proposed wind farm is provided in the Irish Wind Energy Association (IWEA) 'Best Practice Guidelines for the Irish Wind Energy Industry' (2012), and I note these are also referred to by observers. The IWEA guidelines make reference to a "usually 'minimum' distance of 4 rotor diameters", but outline that the spacing of turbine is a commercial decision depending largely on orientation, prevailing wind and wind analysis.

I understand the standard design approach for optimising energy yield and performance include wind analysis, turbine separation distance in the interest of minimising wake effects and turbulence to optimise individual turbine performance, and turbines numbers to increase overall energy yield. Turbine separation distance is also noted to be a consideration for turbine manufacturing warranty, noting that incorrect spacing could impact on the performance and wear and tear of the turbines. Furthermore, the increased height and blade length of modern turbines are noted to capture more wind energy at lower wind speed and more consistent wind given the higher altitude with less turbulence created by surrounding vegetation and buildings. I note modern wind turbine design incorporates features which allows for wake adjustments.

Having regard to the above, I note the proposed turbine layout has been largely orientated towards the prevailing wind direction, with spacing exceeding 3RD and that the spacing of turbines and the number of turbines is a commercial decision within the overall iterative design process.

As above, my EIA as set out in Section 10.0 assessment takes account of the location and layout of the proposed turbines.

9.10. Legal and Other Matters

9.10.1. Landowner consents

There are a number of concerns expressed in terms of property ownership, turbary rights and wayleaves. The Roads Department reference the need for third party consent along the GCR.

Letters of consent from all the landowners have been provided in Addendum 2 of the planning application submission. I note submitted planning drawing ref. 190723 – 02 includes the relevant landowner boundaries. These landowner consents, as sets out within the applicant's Response to Submissions, relate to the proposed development components for which planning permission is applied for, specifically the proposed wind farm and TDR accommodation works. In response to submissions, the applicant confirms that proposed vegetation trimming on the southern side of R332 is within the within the control of the applicant and landowner consent letter provided.

Planning permission has not been sought for the proposed grid connection. The applicant clarifies that a separate application for consent will be made to the Commission in accordance with the provisions of 182A of the Planning and Development Act 2000, as amended. In reference Art. 22(g)(ii) of the Planning and Development Regulations 2001 (as amended), the applicant outlines that grid connection works carried out in the public road by a statutory undertaker do not require a letter of consent.

Therefore, having regard to the information contained in the application form, I am satisfied that the applicant has sufficient interest to submit an application for the proposed development. I would refer the Commission to Section 37H (6) of the 2000 Act, as amended where it is clearly stated that *"a person shall not be entitled solely by reason of a permission under this section 37G to carry out any development".*

Whilst I note concerns raised in regard to existing peat extraction at part of the subject site and substitute consent requirements, the PA has confirmed that the subject site is not subject to any enforcement case and this is noted in the applicant's Response to Submissions.

9.10.2. **Wind Energy Guidelines**

The majority of observations have raised concerns that the 2006 Guidelines to which regard and reliance is had in planning decisions are outdated.

The preparation of wind energy guidance is within the remit of Government. At the time of writing, the 2006 Guidelines remain in force and there are no updates from the Government on an anticipated publication date for new guidelines to replace the 2006 Guidelines.

The Commission will note that the CDP outlines in Policy Objective RE 3, and in DM Standard 69, that the assessment of wind energy development shall have regard to the 2006 Guidelines or any updated/superseded documents which accords with Section 28 Guidelines. Furthermore, Policy Objective 14 in the LARES sets out that "all onshore wind energy developments shall comply with the National Wind Energy Development Guidelines or any subsequent version thereof."

Of note, the applicant in this instance has opted to apply key elements of the Draft 2019 Guidelines in terms of the proposed development including 4 times the tip height setback to houses and zero-shadow flicker, and it is considered that this is appropriate and seeks to apply best practice to the consideration of the proposed development.

9.10.3. **Environmental Assessment**

Observers raise concerns regarding compliance with the SEA Directive (2001/42/EC) specifically in relation to the 2006 Guidelines, the National Renewable Energy Action Plan and the National Energy and Climate Plan (NECP) 2021-2030 and references Court of Justice of the European (CJEU) C-24/19. Observers also query if a full SEA has been conducted for all related wind farm applications in this and other counties.

As set out above, the 2006 Guidelines remain in force and the matter of SEA in the context of the existing 2006 Guidelines is not within the remit or scope of the Commission in the context of the current application, nor is the matter of SEA in the context of the National Renewable Energy Action Plan Ireland. I note the updated National Energy and Climate Plan (NECP) 2021 – 2030 (2024) was subject to both SEA and AA.

I do not consider that the planning application for the proposed development in combination with any other wind farm applications constitute a plan or a programme under Article 2(a) of the SEA Directive.

Considering the existing legal environmental framework context, I note the NPF First Review, the RSES and the CPD including the Wind Energy Strategy have been subject to SEA. The Draft 2019 Guidelines are also noted to be subject to SEA, however as noted the status of these remain draft. At a project level, I am satisfied that the proposed development has been subject to environmental assessment under the EIA Directive (refer to Section 10.0) and that the proposed development has been subject to assessments under the Habitats and Birds Directives and assessment under the Water Framework Directive, as per Section 11.0 and Section 10.9 of this report, respectively.

9.10.4. **Project Splitting**

Project splitting concerns have been raised in a number of observations in relation to both the planning application and the EIAR.

The term project splitting is generally applied where a single project is split into smaller projects for the purpose of avoiding an EIA[1]. This is not the case in this instance. As per Section 10.1, the proposed development triggers a mandatory EIA, and the applicant has undertaken an EIA. Case law[2] has confirmed that an EIA undertaken for a wind farm development should include the cumulative impacts of the grid connection, and that the grid connection is considered an integral part of the proposed development. In this regard, and having reviewed the EIAR, I am satisfied that the overall Proposed Project as per Section 1.1.1 of the applicant's EIAR and the EIAR boundary shown in Figure 1-1 has been assessed cumulatively.

The applicant outlines the intention to submit a future application for consent for the grid connection, substation and BESS. Case law[3] has confirmed that there is no requirement that the grid connection must be included within the application for the

[1] OPR, June 2021. OPR Practice Note PN02 Environmental Impact Assessment Screening.
[2] O'Grianna v An Coimisiún Pleanála (Peart J) [2014] IEHC 362
[3] North Kerry Wind Turbine Awareness Group v ABP IEHC 126

wind farm. I am satisfied that there is no legal requirement for the overall Proposed Project to be subject to a single application.

9.10.5. **Cumulative Development**

I have reviewed the submitted cumulative wind energy list within a 25km study area as outlined by the applicant in the EIAR (Appendix 2-3), and I am satisfied that the cumulative baseline, is sufficiently up to date. Wind farm developments identified as proposed or at pre-application stage (Gannow Wind Farm) are, at the time of writing, with the Commission for determination.

In regard to other cumulative developments, taking account of potential zone of influence, I am satisfied that this is also sufficiently up to date.

Cumulative effects are considered in Sections 10.0 and 11.0 below.

9.10.6. **Decommissioning**

Concerns have been raised that there is no estimated cost provided for decommissioning or financial bond or guarantee mechanism described. I am satisfied that the decommissioning plan for the proposed wind farm has been described in the application (EIAR Appendix 4-6). Furthermore, it would be standard approach in the event consent is granted to attached prior to commencement conditions seeking a Site Restoration Plan and the agreement and lodgement of a security cash deposit or bond to secure the satisfactory reinstatement of the subject site dimensioning.

9.10.7. **Impact on future developments**

A number of observations have raised concerns regarding potential restrictions on the building of future homes as a result of the proposed development and that permitting the proposed development would undermine the constitutional rights under Article 43 Private Property of Constitution of Ireland.

Whilst these concerns are noted, it is important to note that every planning application is assessed on its own merit. Furthermore, I am not aware of any land zoning within the CDP for residential development pertaining to the subject site of the proposed development or the surrounding area nor would it be reasonable or

appropriate to restrict the proposed development on account of potential one off residential properties. All existing, permitted and proposed (subject to planning application) residential properties within the relevant study areas have been considered in Section 9.4 above and assessment in Section 10.0 below.

I do not consider the provisions of Article 43 'Private Property' within its defined remit "to pass no law" to be applicable to the planning application process for the proposed development. In terms of the rights of private property, as set out above, I am satisfied that all relevant landowner consents have been submitted by the applicant.

9.10.8. **Refusal of one off residential properties**

Observations have made reference to planning decisions to refuse single one off dwelling houses within this area for reasons related to vehicular access off the R332 or visual impact. In this regard, I note one of the main differences between these individual developments and the proposed development is the policy context within which they are considered. The development of renewable energy to address climate change and meet renewable energy targets is a national policy which benefits society as a whole with the structures decommissioned and removed after a specified time. The development of a permanent one off house in a rural area has no wider benefit than to the individual/s involved.

10.0 Environmental Impact Assessment

10.1. Statutory Provisions

10.1.1. This section sets out an environmental impact assessment (EIA) of the proposed development.

10.1.2. The proposed development comprising 9 no. wind turbines and an output of approximately 54 to 64.8MW exceeds the threshold for mandatory EIA, as per Part 2 (3)(i), Schedule 5 of the Planning and Development Regulations, 2001 (as amended). The proposed development therefore requires EIA.

10.1.3. The submitted EIAR considers the totality of the proposed development i.e. the proposed windfarm, the substation, BESS, turbine delivery accommodation works, grid connection route, and mitigation and biodiversity enhancement measures.

10.2. EIA Structure

10.2.1. This section of the report comprises the environmental impact assessment of the proposed development in accordance with Planning and Development Act 2000 (as amended) and the associated Regulations, which incorporate the European directives on environmental impact assessment (Directive 2011/92/EU as amended by 2014/52/EU). Section 171 of the Planning and Development Act, 2000 (as amended) defines EIA as:

a) consisting of the preparation of an EIAR by the applicant, the carrying out of consultations, the examination of the EIAR and relevant supplementary information by the Commission, the reasoned conclusions of the Commission and the integration of the reasoned conclusion into the decision of the Commission, and

b) includes an examination, analysis and evaluation, by the Commission, that identifies, describes and assesses the likely direct and indirect significant effects of the proposed development on defined environmental parameters and the interaction of these factors, and which includes significant effects arising from the vulnerability of the project to risks of major accidents and/or disasters.

10.2.2. Article 94 of the Planning and Development Regulations, 2001 (as amended) and associated Schedule 6 set out requirements on the contents of an EIAR.

10.2.3. This EIA section of the report is therefore divided into two sections. The first section assesses compliance with the requirements of Article 94 and Schedule 6 of the Regulations. The second section provides an examination, analysis and evaluation of the proposed development and an assessment of the likely direct and indirect significant effects of it on the following defined environmental parameters, having regard to the EIAR and relevant supplementary information:

- population and human health,
- biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive,
- land, soil, water, air and climate,
- material assets, cultural heritage and the landscape,
- the interaction between the above factors, and
- the vulnerability of the proposed development to risks of major accidents and/or disasters.

10.2.4. It also provides a reasoned conclusion and allows for integration of the reasoned conclusions into the Commission's decision.

10.3. Compliance with the Requirements of Article 94 and Schedule 6 of the Regulations 2001

10.3.1. The applicant's EIAR comprises of Volume 1 Non-Technical Summary (NTS) and Main Report, Volume 2 Photomontage Booklet, and Volume 3 Appendices. Compliance with the requirements of Article 94 and Schedule 6 of the Regulations is assessed below.

Table 10.1 Compliance with the requirements of Article 94 and Schedule 6

Article 94 (a) Information to be contained in an EIAR (Schedule 6, paragraph 1)
• A description of the proposed development comprising information on the site, design, size and other relevant features of the proposed development (including the additional information referred to under section 94(b).
Chapter 1 provides a description of the site location including maps (Figure 1-1). Chapter 4 provides a description of the Proposed Project including details on layout, project components, access, material requirements, temporary works, biodiversity enhancement, community gain proposals, construction methodology, operation, and decommissioning. It is noted that the Proposed Project includes demolition of a derelict structure. The description is adequate to enable decision making. I comment on the description of the Proposed Project, where necessary, in the technical assessment below.
• A description of the likely significant effects on the environment of the proposed development (including the additional information referred to under section 94(b).
An assessment of the likely significant direct, indirect, and cumulative effects of the proposed development is carried out for each of the technical chapters of the EIAR, Chapter 6 to 16. Interactions are considered in EIAR Chapter 17, and a Schedule of Mitigation and Monitoring Measures is presented in EIAR Chapter 18. I am satisfied that the assessment of significant effects is comprehensive and robust and enables decision making. I comment on the assessment of significant effects, where necessary, in the technical assessment below. Whilst concerns by raised by observers relating to the origin of raw wind turbine materials including rear earths material and EU Machinery Directive, I am satisfied that the activity of extracting raw material whether for the manufacturing of wind turbines or other manufacturing processes or health and safety associated with such manufacturing would not be within the remit of the Proposed Project EIAR to assess or demonstrate. Such activities would be subject to its own consenting process and/or environmental impact considerations depending on its origin. The activity being considered is the Proposed Project which will not result in transboundary effects, significant or otherwise.
• A description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment of the development (including the additional information referred to under section 94(b).
The EIAR includes designed in mitigation measures and measures to address potential adverse effects identified in technical studies. These, and arrangements for monitoring, are outlined in appendices and summarised in Chapter 18 (Schedule of Mitigation and Monitoring Measures) and Appendix 4-5 (CEMP). Mitigation measures comprise standard good practices and site-specific measures and are largely capable of offsetting significant adverse effects identified in the EIAR. I comment on measures, where necessary, in the technical assessment below. The Commission's attention is drawn to proposed mitigation measures and concerns over same regarding Biodiversity, Birds, Geology and Water as set out in this Inspector's Report.

• A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment (including the additional information referred to under section 94(b).
A description of the alternatives considered is contained in Chapter 3 of the EIAR. I am, therefore, satisfied that the applicant has studied reasonable alternatives in assessing the proposed development and has outlined the main reasons for opting for the current proposal before the Commission and in doing so the applicant has taken into account the potential impacts on the environment. I comment on layout, where necessary in the technical assessment below and in Section 9.0 above.
Article 94(b) Additional information, relevant to the specific characteristics of the development and to the environmental features likely to be affected (Schedule 6, Paragraph 2).
• A description of the baseline environment and likely evolution in the absence of the development.
A description of the baseline environment for the Proposed Project has been provided in each of the technical chapters of the EIAR. A likely evolution in the absence of the development is provided under the 'do nothing scenario'. I am satisfied that a comprehensive understanding of the baseline environment has been provided and enables identification of key impacts in respect of likely effects as a consequence of the proposed development. I comment on baseline, where necessary in the technical assessment below and in Section 9.6 above. The Commission's attention is drawn to the baseline regarding Biodiversity, Geology, Water and Noise as set out in this Inspector's Report.
• A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved
The methodology employed in carrying out the EIAR, including the forecasting methods is set out, in Chapter 2 and in each of the individual chapters assessing the environmental effects. The applicant has indicated in the different chapters where difficulties have been encountered (technical or otherwise) in compiling the information to carry out EIAR. I comment on these, where necessary in the technical assessment below and for the reasons stated, I am satisfied that forecasting methods are adequate in respect of likely effects.
• A description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it.
This issue is specifically dealt with in Chapter 17 of the EIAR. Specific risks have been identified in relation to the vulnerability of the Proposed Project. I have commented on this in Section 10.16 below.

Article 94 (c) A summary of the information in non-technical language.
This information has been submitted as a standalone section within Volume 1 of the EIAR. I have read this document, and I am satisfied that the document is concise and comprehensive and is written in a language that is easily understood by a lay member of the public given the nature of the proposal.
Article 94 (d) Sources used for the description and the assessments used in the report.
The sources used to inform the description, and the assessment of the potential environmental effects are set out within each chapter. I consider the sources relied upon are generally appropriate and sufficient.
Article 94 (e) A list of the experts who contributed to the preparation of the report.
A list of the various experts who contributed to the report are set out in Chapter 1 and technical chapters of the EIAR and in Appendices. Where relevant the introductory section of each of the chapters and appendices also detail the individual's expertise, qualifications which demonstrates the competence of the person in preparation of the individual chapters within the EIAR. I note a number of observations have raised concerns regarding the competency of the technical experts involved in the preparation of the EIAR, and the independence of the technical consultants. I have reviewed the EIAR and I am satisfied that the EIAR has been prepared by experts with competency in the technical subject areas.

10.3.2. **Alternatives considered**

Observations have raised concerns that alternative technology options for producing energy have not been investigated and question the viability of wind energy. Concerns have been raised that the proposed design alternatives in the EIAR did not include an alternative to avoid intact bog.

I have addressed the strong policy support for renewable energy, including onshore wind in Sections 9.2 and 9.3. I have considered turbine efficiency and layout in Section 9.10 above. I have addressed design flexibility and EIAR in section below. I have not repeated these matters herein

As above, Chapter 3 of the EIAR provides a description of alternatives considered. This is noted to include alternative site locations and selection criteria informing

such a process. Having regard to site selection, alternative renewable energy technologies considered was primarily focused on solar and reasoning for selecting onshore wind is provided. Offshore wind is noted as an alternative source of renewable energy and reasons for not selecting this have been provided.

The turbine layout is informed by the constraints map (Figure 3-2) and layout iterations considered and reasons for the option chosen are provided in Chapter 3. The site access road design was chosen following confirmation of the turbine layout and the design criteria for selecting the chosen route is provided. Alternative site access, construction compound, site cabling route, met mast and the substation compound locations considered are set out and the reasons for selecting the chosen options provided. Transport of materials and borrow pits taking account of site characteristics have been considered (Table 3-5) and alternative for turbine delivery routes (Table 3-7). In relation to the grid connection, overhead and underground cabling were considered and two underground routing options (Figure 3-7 and Table 3-6). I note from the applicant's Response to Submission, in regard to a query by TII confirms that the feasibility of 'Loop-in' to existing overhead line was ruled out because unsuccessful landowner negotiations.

Having regard to the above, I am satisfied that the applicant has studied reasonable alternatives in assessing the Proposed Project and has outlined the main reasons for opting for the current proposal before the Commission and in doing so the applicant has taken into account the potential impacts on the environment. I am, therefore, satisfied that the applicant has studied reasonable technology and layout alternatives which are relevant to the project and its specific characteristic, and provided the main reasons for the option chosen as per Article 5(1)(d) of the 2014 EIA Directive.

10.3.3. **Design flexibility**

Observers have raised concerns that key characteristics of the proposed development are not finalised and that this prevents the full and accurate assessment of the development as required under the EIA Directive.

As above, an Opinion of Flexibility (ref. ABP 322632-25) accompanies the application, in respect of provisions under the Planning and Development, Maritime

and Valuation (Amendment) act 2022. The details unconfirmed for the proposed development are the turbine rotor diameter and hub height.

Section 1.7.3 of the EIAR describes the assessment of the design flexibility rotor diameter turbine range and hub height range within the total tip height of 180m. The EIAR sets out three turbine parameter scenarios which have informed the technical assessment and an assessment of the turbine parameter range are provided in Table 1-2. I have reviewed the turbine parameter range and note that these are within the range of the Design Flexibility Opinion, and I am satisfied that these have been clearly identified and assessed within the relevant technical sections, as relevant.

I am satisfied that an assessment of likely significant effects under the EIA Directive does not prevent flexibility, and that assessing parameters is acceptable and often necessary, as long as such flexibility and the likely significant effects resulting from such flexibility is assessed. My EIA assessment is set out in the following sections, and I am satisfied that the likely significant effects of the agreed design flexibility parameters have been clearly identified and assessed in the relevant technical section of the submitted EIAR.

10.3.4. **Consultations**

The majority of submissions have raised concerns in relation to inadequate consultations. Submissions state that consultations were administrative rather than genuine and query the effectiveness and inclusivity of consultation.

The application has been submitted in accordance with the requirements of the Planning and Development Act 2000, as amended, and the Planning and Development Regulations 2001, as amended, in respect of public notices. In addition, the applicant has carried out public consultation and the public consultation stages. Submissions have been received from statutory bodies and observers and are considered in this report, in advance of decision making.

Consultations are described in Chapter 2, Sections 2.7 and 2.8 of the EIAR, and the Community Engagement Report is provided in Appendix 2-2. The applicant's Response to Submissions states that a Community Liaison Officer (CLO) was appointed and community consultations were carried out from early 2023, during

2024 and with update information provided in September 2025.The applicant states that the community engagement overlaps with the design phases of the proposed development. Door-to-door consultation was carried out within 1km from the proposed Wind Farm site. Wider community consultation is noted to have been carried out within a 2km radius of the proposed turbines and with a number of local clubs including Killkerrin-Clonbern GAA and Mountbellew GAA and local schools, including Briarfield National School, Cooloo National School, Barnaderg National School and Lavally National School.

I am satisfied that the community engagement meets the requirements of the 2006 Guidelines and the Draft 2019 Guidelines. Furthermore, I note the commencement of community engagement programme coincided with the EIA scoping consultation and overlaps with baseline surveys informing the EIAR. As stated previously, the information presented in the EIAR complies with the Aarhus Convention.

Whilst I note the concerns raised by observers in relation to the EIAR figures omitted in error in the soft copy of the submitted EIAR, and which were circulated to all parties of the application, I am satisfied that the these were included in the originally received paper copy of the EIAR by the Commission and available for public viewing as per the public notices. Furthermore, whilst concerns are noted, I am satisfied that the applicant was provided with the opportunity to respond comments raised in observations.

Taking account of the information provided within the EIAR I am satisfied that appropriate consultations have been carried out and that observers have had the opportunity to comment on the proposed development in advance of decision making.

10.3.5. **Compliance**

Having regard to the foregoing, I am satisfied that the information contained in the EIAR, and supplementary information provided by the developer is sufficient to comply with article 94 of the Planning and Development Regulations, 2001.

Where concerns have been raised in relation to specific technical topics, these have been assessed below in the relevant sections.

10.4. Assessment of Likely Significant Effects

10.4.1. This section of the report sets out an assessment of the likely environmental effects of the proposed development under the environment parameters, as set out Section 171A of the Planning and Development Act 2000, as amended (see paragraph 10.2.3 above). Where relevant, headings based on the environmental parameters have been subdivided and ordered to better reflect the layout of the submitted EIAR and the main environmental considerations of the proposed development.

In accordance with section 171A of the Act, which defines EIA, this assessment includes an examination, analysis and evaluation of the application documents, including the EIAR and submissions received and identifies, describes and assesses the likely direct and indirect significant effects (including cumulative effects) of the proposed development on these environmental parameters and the interaction of these.

10.5. Population and Human Health

Chapter 5 of the EIAR contains the assessment of Population & Human Health. Associated appendices comprise the following:

- Appendix 5-1 Wind Farms & Health Literature Review, Chapman 2015.
- Appendix 5-2 Impact of Wind Turbines on House Prices on Scotland – Climate Exchange (2016).
- Appendix 5-3 Advice on Wind Turbines and Horses – Guidance for Planners and Developers (British Horse Society).
- Appendix 5-4 Comparative Shadow Flicker Report.

10.5.1. Issues Raised

The submission from the National Office for Environmental Health Services (NEHS) has commented on the human health assessment, noise and shadow flicker. number of issues have been raised by the observers in relation to landuse, community, population, human health, shadow flicker, and farming including dairy cows and equine interests.

I have addressed sensitive receptors, setback distances and residential amenity in Section 9.4 and devaluation of properties in Section 9.7 above, and not repeated it herein. I have made reference to the assessments in Section 10.9 Water, Section 10.10 Air Quality, Section 10.11 Climate, Section 10.12 Noise and Vibration, Section 10.13 Landscape and Visual, Section 10.15 Material Assets below.

10.5.2. **Context**

It is noted that taking account of possible interactions, the assessment in EIAR Chapter 5 presents an amalgamation of findings of the following assessments: Chapter 8 Land Soil and Geology, Chapter 9 Water, Chapter 10 Air Quality, Chapter 11 Climate, Chapter 12 Noise and Vibration, Chapter 14 Landscape and Visual, Chapter 15 Material Assets (including Traffic and Transport) and Chapter 16 Major Accidents and Natural Disasters.

The population study area for the proposed development includes the Electoral Divisions (EDs) of Cooloo, Hillsbrook and Moyne for the subject site (EIAR Figure 5-4). The shadow flicker study area which extends to 1.62 km (10 x max rotor diameter 162m) from the proposed wind turbines (EIAR Figure 5-3). The population study area for the GCR is all properties within 100 metres of the underground cabling route.

10.5.3. **Baseline**

Baseline is set out in Section 5.3 for population and Section 5.8 for health of the EIAR.

The 2022 population of the study area was 1,976 persons. There are 218 no. sensitive receptors identified within the shadow flicker study area. There are 153 no. sensitive Receptors within 100m of the GCR.

The population of the study area grew by 4.7% between 2016 to 2022 which is below County (7.6%) and National (8%) levels for the same period. The population density in 2022 was 27.92 persons per km^2 within the study area and in comparison, at County and National levels the population density was 47.11 and 73.28 persons per km^2, respectively. The average household size in the study area was slightly above the average household size at County and State levels (2022).

When compared with County and National levels, the study area had a higher number of persons in all categories except 15-24 and 25-44 categories where the number of persons were lower (2022). The percentage of the population in the labour force in the study area is within 0.5% of that at County and National levels. Non-manual labourers made up the highest category within the study area. The percentage of persons working in Manual Skilled, Semi-Skilled, Own Account Workers, Farm, and Agricultural Workers categories were higher in the study area than at County and National levels. In 2022, the approximately 50% of the population within the study area reported of being of 'Very Good' health and over 30% reported of being of 'Good' health.

Land uses in the area surrounding the subject site comprises pastoral agriculture, peat bogs and low density residential. Farmland comprises 80.5% of the study area, and the average farm size is 24.9ha based on 228 no. farms. The closest service centre is Tuam with local facilities provided in the villages of Brierfield and Moylough. The closest schools are Brierfield National School and Scoil Bride. The nearest community facility to the subject site is the Killererin GAA Club in the village of Barnaderg.

The closest tourist attractions are Knockmoy Abbey ruins (c. 5.4 km southwest) and Richmond Esker Nature Reserve (c. 4.35 km northeast). In 2023, tourism in the western region comprising of Counties Galway, Mayo and Roscommon accounted for 12.9% of the national tourist income and 12.8% of the total number of overseas tourists.

10.5.4. **Potential Effects**

Table 10.2 Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • Land use will continue. Opportunities to contribute energy targets and to generate local employment and investment would be lost.
b) <u>Construction</u>:

- Health: Impact on construction workers where health and safety rules are not implemented, short-term negative **Significant**.
- Population and Tourism: No change to the population trends or demographics predicted. No impact on tourism predicted.
- Employment and investment: Influx of skilled people and up-skilling for Proposed Project, effect is long-term positive direct and indirect Moderate.
- Land Use: No impact on surrounding land uses. Temporary slight interference with agriculture and access, Not Significant.
- Property Values: Potential short-term slight negative impact.
- Residential Amenity: Refers to assessments within relevant EIAR chapters.

c) Operation

- Population: No change to the population trends or demographics predicted.
- Employment and Investment: Employment effect, is long-term positive slight. Investment effect on local community, is long term, positive, direct and indirect, **Significant**.
- Land Use: Effect is Not Significant.
- Property Values: Effect is long-term imperceptible, Not Significant.
- Tourism: Effect is long-term negative and imperceptible, Not Significant.
- Residential amenity: Refers to relevant assessments of the EIAR.
- Health: Refers to relevant technical assessments of the EIAR. Health and safety impacts, long-term and slight. Shadow flicker effects, long-term negative slight.

d) Decommissioning:

- Similar to those effects experienced during the construction phase, but to a lesser extent.

e) Cumulative:

- Other Developments: No significant direct or indirect cumulative effects predicted, includes reference to relevant technical assessments within the EIAR. Long term positive cumulative effects on employment, investment and services, and on air quality and climate. No cumulative shadow flicker effects.

10.5.5. **Mitigation**

Notable mitigation measures in the EIAR include:

- Health and safety legislation and a Health and Safety Plan for construction, and mitigation measures detailed in the CEMP (Appendix 4-5). Requirement for a Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS).
- Mitigation and best practice measures as outlined in: Chapter 8 Land, Soils and Geology; Chapter 9 Hydrology and Hydrogeology; Chapter 10 Air Quality; Chapter 12 Noise and Vibration; Chapter 13 Landscape and Visual; Chapter 15 Material Assets; Chapter 16 Major accidents and Natural Disasters; and Chapter 18 Schedule of Mitigation and Monitoring Measures.
- Operational Health and Safety Plan, restricted access to turbines, erection of operational safety signs, and regular maintenance.
- Shadow flicker: Shadow flicker predictions data and site visits, site specific screening measures to be implemented in the event of an occurrence of shadow flicker exceeding the 30 minutes per day threshold (the 2006 Guidelines), and implementation of wind turbine control measures. Each wind turbines will be fitted with shadow flicker control units and with turbine control software applied.

10.5.6. **Residual Effects**

- Construction (including decommissioning): No significant negative or positive residual effects including cumulative effects predicted. The residual effect on residential amenity is short-term, slight to moderate negative and not significant.

- Operational: No significant negative residual cumulative effects predicted. The residual effect on residential amenity is negative, moderate, and long-term, Not Significant. Predicted residual effects on health is long term, negligible to imperceptible, negative and not significant with a long-term overall moderate positive and not significant effect on air quality predicted. A positive long term Significant effect on local community from investment.

10.5.7. Analysis, Evaluation and Assessment: Direct and Indirect Effects

10.5.7.1. Population trends

Submissions from Elected Members (attached to the Chief Executive report) and from observers have raised concerns regarding impact on future rural housing in the areas surrounding the subject site, the need to protect the rural population, depopulation of the area and impact on local the enrolment numbers of local schools and the loss of the rural community.

Whilst I recognise the concerns raised, no relevant studies have been referred to in submissions and I am not aware of any peer reviewed evidence base demonstrating that the presence of wind farm development over the past few decades in Ireland have led to significant, or noticeable, depopulation within rural areas. I note the applicant's response on the matter. I note that the PA are of the opinion that the proposal would not result in adverse impacts on Population.

I have considered the findings of the applicant's EIAR in terms population and employment effects as summarised above. I have had regard to my conclusions in the preceding Section 9.0, in relation to renewable energy targets and land use policy context, setback to residential receptors, and the findings of no significant negative impact on the residential amenity and no significant adverse impact on the property or land values. I am, therefore, satisfied that the proposed development would not result in significant effects on the population trends in the area and that overall, it cannot be demonstrated that the presence of the proposed wind farm will directly result in depopulation within the area.

10.5.7.2. Impact on land use

Observers raise concerns regarding the loss of agricultural land and amenity and recreational use as a result of the proposed development. I am satisfied that the built footprint of the proposed development occupying 10.6 ha of predominately grazing land and bog will not have a significant effect on existing agriculture and forestry land use within the subject site or within the surrounding area. I further note the population study area of the EIAR comprises 5,786.4 ha of farmland. The applicant has outlined in the EIAR that existing agricultural practices and activities will continue within the subject site alongside the proposed development. The subject site, except where it overlaps with public roads, is in private ownership, and I note there are no recreational or amenity uses within subject site or any public access rights.

Whilst I note concerns raised by observers in respect of impacts on grass growth arising from wake effects from wind turbines and the potential for wind turbines to alter micro-climates on surrounding lands, I am not aware of any peer reviewed evidence base research or credible scientific evidence is provided to illustrate that there would be potential for such effects.

Concerns are raised in respect of impacts of the proposed development on the marketing strategy for Irish agricultural and food aboard, and potential for reduced demand for Irish products. I note no evidence to support these concerns have been submitted nor am I aware of any peer reviewed evidence base indicating that wind farms have a negative impact on consumers perception of agricultural produce whether Irish or from other jurisdictions.

Concerns relating to impact on adjacent land uses include access to farmyards, moving livestock and peat cutting (turbary rights) and limitation of use due to safety hazard arising. The full extent of the proposed wind turbines is located within the confines of the subject site and are not noted to oversail local roads or adjacent lands. No safety hazard has been identified in the EIAR which would impact on any adjacent land uses. I note access to surrounding farms are to be maintained during the construction phase. Considering this, I am satisfied that the proposed development would not limit or restrict peat cutting or farming activities in the locality.

Bovine interests: Concerns have been raised on the impact on bovine interests including cattle and dairy cows and ovine interests. I note it is not uncommon for wind farms and agricultural interests to operate alongside each other including grazing by livestock, and, as above, it is anticipated that existing grazing will continue onsite throughout the operation of the proposed development. The 2023 paper 'Importance of Noise Hygiene in Dairy Cattle Farming - A Review' (D. e. al., Acoustics, 5(4)) as referred to by several observers, does not consider external noise sources to farms. The focus of the 2023 paper is on noises generated from sources such as machines, equipment, plants and ventilation are typical within modern farmyards and inside farm buildings. It outlines that up to 70 dB are acceptable noise levels within a farm which as confirmed by the applicant in their Response to Submissions (Appendix 3) and in the assessment in Chapter 12 of the EIAR, are substantially above the noise levels that farms and cattle would be exposed to from the operation of the proposed development.

I further note these farm noise levels are quoted in the 2024 paper 'Q2E-Ruminants-Equines-2024-005' by the European Union Reference Centre for Animal Welfare (EURCAW) *Ruminants & Equines.* EURCAW (2024), in response to a query relating to the effects of wind turbine on bovine, found that wind turbine noise does not give rise to noise that is sudden and high pitched, are less than other sounds experienced by cattle on farms and are well below those likely to impact on animal welfare including dairy cows. EURCAW further noted that there is no evidence that shadow or visual disturbance caused by wind turbines have an impact on bovine welfare. Whilst outlining a need for further research, EURCAW (2024) noted that the expected outcome of such research is a conclusion that domesticated species will not be harmed by the sound of wind turbines and will habituate. Having regard to the above, I am satisfied that the proposed development would not have a significant effect on bovine interests.

Equine Interests: The observers raise concerns in respect of impacts from the wind turbines on thoroughbred horses, on the basis that these animals are highly sensitive. In respect of equine interests, Appendix 5-3 of the EIAR contains a copy of The British Horse Society: Advice On Wind Turbines and Horses Guidance for Planners and Developers'. I note there are no national policy or guidelines applicable to the topic, and equine interest are not considered in the 2006

Guidelines or the draft 2019 Guidelines. On the account of the lack of relevant advice within the jurisdiction, I consider that advice published by The British Horse Society (BHS) provides a suitable basis for this assessment.

The BHS in its updated policy 'Advice on Wind Turbines and equestrian access' (May 2025), states that wind farms are becoming a more common and are, therefore, becoming more familiar to horses and equestrians. The movement of modern large-scale turbines is noted to be slow and rhythmical and less likely to be perceived as a threat, and that the noise generated by these is lower and changes with distance, angle and conditions. The BHS recommends familiarisation by allowing horses to be accommodated in a field close by to experience the turbines, and a separation distance between a commercial turbine and any 'route'[4] of blade tip height plus 10%. As per Section 9.9 above, all proposed turbines are fully accommodated within the planning application boundary, and I note the location of proposed turbines exceeds the BHS (2025) recommended separation distance in relation to adjoining public roads. Having regard to the above, I am satisfied that the proposed development would not have a significant effect on equine interests.

Conclusion: Having regard to the above and the relevant chapters of the EIAR as considered below, and in the absence of any peer reviewed scientific evidence which indicate that wind farms have a negative adverse effect on agriculture land use infests, I am satisfied that the proposed development will not have a significant adverse effect on land use within the subject site, adjoining the site or on bovine and equine interests within the area.

10.5.7.3. Shadow Flicker

A number of submissions raise shadow flicker concerns in relation to methodology, number of dwellings impacted and omission of dwellings, inadequacy of the 2006 Guidelines and the no shadow flicker requirements in the Draft 2019 Guidelines, cumulative impacts, and the wind turbine control system. Whilst I note observers reference shadow flicker effects on farming, I do not consider this applicable as shadow flicker effect occurs when the blades of a wind turbine cast a shadow over a

[4] BHS within a UK context defines as "route" as "all classes of highway available to horses – bridleway, restricted byway, byway open to all traffic, general purpose road (surfaced or unsurfaced) – and permissive routes".

window in a nearby house. References to newspaper articles are also noted. The NEHS raises concerns regarding shadow flicker arising from the proposed development, and states that mitigation measures should be employed to fully eliminate exposure of sensitive receptors to shadow flicker.

The shadow flicker methodology applied by the applicant is in accordance with the 2006 Guidelines, and the applicant has confirmed that by the implementation shadow flicker control system and programming of the wind farm control system the requirements of the Draft 2019 Guidelines can be met. Whilst the Draft 2019 Guidelines are still draft, it is now considered best practice to implement a zero shadow flicker mitigation strategy for wind farms in Ireland. Of note, the NEHS in their submission recommends that the zero shadow flicker be condition in line with the Draft 2019 Guidelines. The EPA guidelines (2022) as referenced by observers do not outline a specific methodology applicable to shadow flicker.

I note the applicant's shadow flicker analysis is precautionary and includes scenarios that overestimate and overstate shadow flicker impacts including the assumption of 100% sunshine during daytime hours. I note both Brierfield NS and Cooloo NS as referred to by observers are included as sensitive receptors within the shadow flicker study area and have been modelled by the applicant. In the theoretical precautionary scenario, the EIAR predicts that 76 no. sensitive receptors within the study area may experience shadow flicker in excess of the 2006 Guidelines threshold (30 minutes per day or 30 hours per annum). Applying shadow flicker mitigation, Table 5-12 of the EIAR presents a reduced daily shadow flicker to a maximum of 28 minutes and below the 2006 Guidelines threshold at the 76 no. receptors.

None of the sensitive receptors modelled are located within 500m of the proposed wind turbines, and as per Section 9.4 above, I have identified no additional sensitive receptors within 500m of the proposed turbines. I have, however, identified one potential sensitive receptor located c. 510m from T5 and additional sensitive receptors located in close proximity to sensitive receptors already included in the shadow flicker modelled. As noted above, the applicant's Response to Submission did not address omissions or updates to the sensitive receptors baseline, or include additional shadow flicker modelling. Whilst there is the potential for these to

experience shadow flicker effects in exceedance of the 2006 Guidelines, I am satisfied that this, as above, can be controlled by applying the shadow flicker mitigation measures proposed by the applicant and that further shadow flicker modelling is not required to be submitted by the applicant.

I accept the applicant's findings that there is no potential for cumulative shadow flicker effects, given there are other wind farms overlapping the shadows flicker study area and the nearest wind turbine is associated with the proposed Clonberne Wind Farm located c. 4.7 km to the north.

Concerns that the shadow flicker control system does not work effectively have been raised by observers and include reference to newspaper articles and court cases pertaining to operational wind farm developments. I do not consider the specific circumstance surrounding these wind farm developments relevant to the proposed development, and I am satisfied that the shadow flicker control system in curtailment of shadow flicker effects is a tried and tested system.

Having regard to the installation of shadow flicker control system to curtail shadow flicker and which I consider has been clearly detailed within the EIAR, I am satisfied that shadow flicker effects as a result of the proposed development on sensitive receptors can, as far as reasonably possible, be eliminated as per the stricter shadow flicker requirements of the Draft 2019 Guidelines. Furthermore, I am satisfied that this can be condition to apply to all existing and permitted sensitive receptors and therefore, address any omissions or updates to the baseline since the submission of the application. In the event the Commission is minded to grant consent, I recommend a zero-shadow flicker strategy is conditioned.

10.5.7.4. **Health Assessment**

Observers state that no Health Impact Assessment (HIA) is provided and that the human health assessment in the EIAR is deficient, not treated as a protected subject of the EIA Directive (2014/52/EU), and not compliant with the EPA EIAR Guidelines (2022). In this regard, I note that the EPA Guidelines outlines that no specific guidance on the meaning of the term Human Health has been issued in the context of EIA Directive 2014/52/EU. The approach taken in the EPA Guidelines has been referred to by the NEHS in their submission and this approach

corresponds with the EC's SEA Implementation Guidance on the consideration of human health, which refers to environmental factors such as soils, water, air etc. I note the EU Guidance on the preparation of Environmental Impact Assessment Report (2017) identifies human health as a broad factor, highly project dependent and one that should be considered in the context of the other factors in Article 3(1) of the EIA Directive including environmentally related health issues.

I have reviewed the applicant's human health assessment within Chapter 5 of the EIAR, and I am satisfied that the assessment is project specific, considers relevant factors within Article 3(1) of the EIA Directive and that an assessment of the interaction of factors has been carried out in Chapter 17 of the EIAR. The Commission will note the NEHS are satisfied that the applicant has assessed the main emissions, in particular noise, shadow flicker, air quality and water.

10.5.7.5. **Health Impacts**

Observations have raised concerns in respect of potential impacts on health. In summary, concerns raised specifically relates to health impacts as a result of the proposed development from disturbance effects (including noise, vibration and shadow flicker), pollution effects (including water supplies and air), visual impacts, and electromagnetic fields. The context of health concerns raised are noted to include the local community, pupils of the primary schools and individual personal circumstances and references sleep disturbance, mental health, neurodiverse conditions and sensory sensitivities, neurological and heart conditions, and other chronic conditions, disabilities and illnesses. The Chief Executive's Report does not raise any concerns regarding adverse impacts on Human Health.

I have considering human health with reference to environmental factors including soil, water, air, noise, shadow flicker and visual within relevant sections below. I have therein found that the proposed development, subject to mitigation measures, would not result in significant adverse residual effects on air quality, would not exceed the thresholds and/or limits that are applicable to noise, vibration and shadow flicker. I have concluded that there is the potential for significant visual effects on a small number of residential receptors where these would experience uninterrupted primary views of the proposed turbines. In my assessment of water

(Section 10.9), I conclude that there is insufficient information submitted to rule out groundwater pathways between subject site, the Proposed Project and sensitive groundwater receptors including water supplies and that the efficacy of surface water management mitigation measures cannot be verified.

I note the applicant provides a comprehensive review of **human health studies** in Section 5.1.4 and in Appendix 5-1 of the EIAR. The applicant finds that there is no peer reviewed scientific evidence base that links wind turbines with adverse health effects. I note the confirmation by NEHS that the Position Paper on Wind Turbines and Public Health: HSE Public Health Medicine Environment and Health Group (February 2017) which formed part of the applicant's literature review has been withdrawn. In the Response to Submissions the applicant notes that literature (Howell et al. 2015) recognises that people with Autism Spectrum Disorder (ASD) may experience greater noise impact than non-neurodivergent individuals, but that more recent studies (Li et al. 2023) noted no correlation between noise and negative ASD symptoms. The 2023 study is noted to have considered noise from roads, rail, air, industry and wind turbines and considering impact on homes.

The WHO Environmental Noise Guidelines for the European Region (2018) are referenced by the NEHS and in a number of observations. The applicant has provided a review of the WHO Guidelines in the EIAR and in the Response to Submissions (Appendix 3). The purpose of the WHO Guidelines (2018) is to provide recommendations for protecting human health from exposure to environmental noise originating from various sources. Conditional recommendations were made in relation to wind turbine noise based on average noise exposure and set a guideline exposure level of 45 dB L_{den}. The WHO Guidelines outline that wind turbine noise above this level is associated with adverse health effects, although the evidence on the adverse effects of wind turbine noise was rated to be of low quality. No recommendations were made for nighttime wind turbine noise levels or for addressing sleep disturbance given the quality of evidence.

I have addressed noise limits in Section 10.12 below and note therein the uncertainties concluded within the WHO Guidelines (2018) relating to L_{den} or L_{night} and how these factors provide for a poor characterisation of wind turbine noise and how this may limit the ability to observe associations between wind turbine noise

and health outcomes. The recent scoping review “Report for UK Government: A review of Noise Guidance for Onshore Wind Turbines” (WSP, 2023) advised that the WHO Guidelines (2018) “have limited relevance and are not considered to offer a robust platform for developing a framework of wind turbine noise effects thresholds.” Having regard to the limitations of the noise characterisation factor applied within the WHO Guidelines and the data informing it, and taking account of the findings of the EIAR, I am satisfied that the proposed development in terms of health effects will not exceed the thresholds and/or limits that are applicable to noise levels for wind farm development within the jurisdiction and which are designed to protect receiving environments.

The NEHS and observations reference recent Irish high court judgements, in particular in relation to noise nuisance. I note the applicant response on this matter in Section 12.3 of Chapter 12 and in the Response to Submissions (Appendix 3). Whilst I note the concerns raised in submissions, I do not consider these judgments directly applicable to the current application given the very specific site and individual circumstances surrounding these. The matter of noise limits and noise characteristics in relation to the 2006 Guidelines have been addressed in Section 10.12 below.

The applicant addresses electromagnetic interference in the EIAR and the Response to Submission. I note the proposed cables will fully comply with applicable international guidelines. The applicant references the ESB publication ‘EMF & YOU Information about Electric & Magnetic Fields and the electricity network in Ireland (April 2017). These states that there are no external electric fields associated with underground cables. Submissions have not submitted documentation indicating otherwise.

Whilst I note other health risk related papers referenced in observations, however given these are not project specific and in the absence of peer review, I have not considered these further. I do not consider submissions have set out any new peer reviewed evidence which links wind turbines with adverse health effects.

10.5.8. **Conclusion: Direct and Indirect Effects**

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observations made in respect of this application. Having regard to the detailed assessment carried out, the location of the Proposed Project, the modest footprint of the development, and subject to the detailed and full implementation of proposed mitigation measures, I am satisfied that the Proposed Project will not give rise to significant direct, indirect, or cumulative effects on the population in terms of population and demographics trends, land use patterns, employment and amenity. I note the potential for significant positive investment effects as a result of the Proposed Project.

Having regard to my assessment on shadow flicker (above), noise and vibration (Section 10.12), Air quality (10.10) and visual (10.13), and the interaction of these factors, I am satisfied that potential unacceptable effects on human health would be avoided, managed and mitigated by the measures which form part of the proposed development and the proposed mitigation measures.

Given my findings in Section 10.9 that there is insufficient information submitted to rule out potential unacceptable effects on water quality including water supplies, I am, therefore, not satisfied that the potential for the proposed development to give rise to an unacceptable effect on human health as a result of the interaction with water quality effects cannot be ruled out.

10.6. **Biodiversity**

Biodiversity is addressed in Chapter 6 of the applicant's EIAR and the following appendices:

- Appendix 6-1 Botanical Study
- Appendix 6-2 Bat Survey Report
- Appendix 6-3 Aquatic Baseline Report
- Appendix 6-4 Biodiversity Management Enhancement Plan
- Appendix 6-5 Confidential Appendix

Birds is addressed separately in Chapter 7 and hydrology and hydrogeology is dealt with in Chapter 9 of the EIAR, see Sections 10.7 and 10.9 below, respectively. Peat Spoil Management Plan is included in Appendix 6-2 and the CEMP in Appendix 4-5.

A NIS was submitted with the application, and as noted, I have addressed the issues relating to Appropriate Assessment (AA) in Section 11.0 below and Appendix B.1 and B.2 of this Inspector's Report.

10.6.1. Issues Raised

DAU outlines the Proposed Project is located adjacent to and crosses the Lough Corrib SAC, impacts on mapped Article 17 habitat Annex I Active Raised Bog [7110] which is noted to correspond with Annex 1 habitat Degraded raised bogs still capable of natural regeneration (7120), and proximity to a known bat roost and marsh fritillary habitat. Chief Executive's Report does not raise any specific issues. Inland Fisheries Ireland outlines measures to protect aquatic species.

Observers have raised concerns that the proposed development will cause permanent significant habitat destruction, in particular bog habitat and adversely impact on species.

10.6.2. Context

- Ecological field surveys were carried out on various dates between May 2021 and June 2025, and an overview of surveys and dates are provided in EIAR Table 6-2 and Appendix 6-3 Bat Survey Report.
- Detail of survey methodology and scope are provided in EIAR Section 6.2.3 as well as in Botanical Study (Appendix 6-1), Bat Survey Report (Appendix 6-2), and Aquatic Baseline Report (Appendix 6-3).
- The applicant did not identify any significant limitations in the scope, scale or context of the assessment. The desk study carried out is described in EIAR Section 6.3.

10.6.3. Baseline

Baseline is set out in Section 6.3 of the EIAR.

Protected sites: Hydrological and hydrogeological connectivity with European sites' Lough Corrib SAC (000297) and Lough Corrib SPA (004042).

Article 17 reporting by NPWS: Cooloo Bog mapped as Annex I habitat Active Raised Bog [7110] overlaps with the northwestern part of the subject site. A number of mapped **Irish Wetland Surveys** overlaps with the subject site and proposed infrastructure.

Habitats – Key Ecological Receptors (KER):

- **Raised Bog (PB1)**, c. 32.29ha within the subject site. The botanical assessment outlines that c. 285m of the proposed floating road between T9 and T7 is within habitat that corresponds with Annex I habitat Degraded raised bogs still capable of natural regeneration (7120). The condition of the bog and relevé data within the marginal and high bog habitat areas were not found to correspond to the Annex I habitat Rhynchosporion depressions (7150) or Annex I habitat Active Raised Bog (7110). Classified as **County Importance**.
- **Cutover Bog (PB4)**, c. 42ha within the subject site. Infrastructure located within bare peat with revegetation and bare peat including areas with active peat extraction include T5, access road between T5 and T6, sections of access road between T7 and T9 (remaining 295m), SRA4 and PRA2. Classified as **Local Importance (higher value)**.
- Other KER habitats, classified as **Local Importance (higher value):** Broadleaved woodland (WD1) and Hedgerows (WL1), Treelines (WL2) and Stone Walls (BL1).

Other habitats (not KER): Improved agricultural grassland (GA1) which is the predominant habitat within the subject site (c. 140.04ha), and Wet grassland (GS4), Dry meadows and grassy verges (GS2), Arable Crop (BC1), Conifer plantation (WD4), Scrub (WS1), Buildings and artificial surfaces (BL3) and Recolonising bare ground (ED3).

- No infrastructure is located within Wet grassland (GS4) containing Devil's bit scabious (Succisa pratensis) or within wet grassland grading into bog habitats or within Rich fen (PF1) habitat which corresponds with Annex I habitat 7230 Alkaline Fen.

- Habitat along the GCR public road corridor will not be impacted. Rhododendron (Rhododendron ponticum) recorded south of watercourse crossing 4, GCR.

Fauna – KER:

- **Otter** spraint recorded near the proposed crossing of Dangan Eighter Stream (Site A1) and downstream on the Grange River (Site D3). No otter holts or couch sites identified within the subject site or along the GCR. Classified as **International Importance.**
- Suitable areas for **Marsh Fritillary** containing Devil's Bit Scabious (Succisa pratensis) recorded and no infrastructure proposed within this habitat area. Larval webs recorded in fields within the subject site, and infrastructure associated with T5 located 17m from recorded larva web. Classified as **County Importance.**
- Suitable habitat for **Badger**, **Pine Marten** and **Red Squirrel** exists within the subject site, particularly conifer plantation. No badger setts, no pine marten dens and no red squirrel dreys recorded. Signs of badger activity recorded outside the subject site and signs of pine martens recorded hunting along drains south of T6 outside the subject site. Classified as **Local Importance (Higher Value).**
- **Bats** are classified as **Local Importance (Higher Value).** Bat activity levels outlined as representative of the habitat composition. Most frequently recorded bat species were Common pipistrelle and Soprano pipistrelle followed by Leisler's bat. Other species recorded were Myotis spp., Brown long-eared bat and Nathusius' pipistrelle (only recorded during static survey). A single bat pass of Lesser horseshoe bat detected during 2022 surveys.
- **Bat roost potential:** Building to be demolished classified as Moderate Roost Potential due to the presence of potential roost features. Active soprano pipistrelle roosts confirmed at two structures to remain, c. 160m from T8 and c. 550m from T7. No potential roost features identified in trees inspected and no signs of bat use or evidence of roosting. No bats were identified roosting on

the assessed culverts and bridges along the GCR and crossing had Moderate roosting potential.

Fauna (not KER): Reptiles and amphibians, suitable habitat exists within the subject site and common frog and frog spawn recorded within the subject site and common lizard recorded outside the subject site.

Aquatic habitats and species – KER:

- Surface watercourses, drains and groundwater and aquatic species, receptor value ranges from **Local importance (higher value)** to **International Importance.**
- **Aquatic habitats:** Watercourses within the subject site identified as Lowland depositing rivers (FW2) and drains are identified as Drainage Ditches (FW4). Hydromorphological and siltation pressures were evident throughout the survey area. Aquatic vegetation representative of Annex I habitat 'Water courses of plain to montane levels, with submerged or floating vegetation of the Ranunculion fluitantis and Callitricho-Batrachion (low water level during summer) or aquatic mosses [3260]' recorded downstream on Grange River.
- **Aquatic species:** The diversity of fish species recorded during surveys (2021, 2024) are noted as typical for the Corrib catchment including Atlantic salmon, brown trout, lamprey (Lampetra sp.), stone loach, pike, minnow, three-spined stickleback and European Eel (only recorded during 2021 surveys). During 2024 surveys, brown trout was recorded at 10 survey sites, Atlantic Salmon at 7 survey sites and good quality salmonid nursey habitat was recorded at a number of locations. Lamprey (Lampetra sp.) was recorded on the Dangan Eighter Stream (Site D2). White-clawed crayfish was recorded on the Dangan Eighter Stream (Site A1) and eDNA sampling detected crayfish plague within the Grange River. Shady whirling beetle (Gyrinus natator) recorded at Derrynacrick Lough (west), and smooth newt was recorded at Horseleap Lough.

10.6.4. **Potential Effects**

Table 10.3: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • Unlikely that any changes would be made to the current land use practices and the general biodiversity would likely remain similar to its current state.
b) <u>Construction:</u> KER Habitats and Fauna: • Rivers, streams and sensitive aquatic species: No direct impacts on any aquatic receptors, no instream works proposed. Indirect effect of water pollution on aquatic habitats and species receptors, **Significant** at a local scale. • Raised Bog (PB1) and Cutover Bog (PB4): Permanent loss of c. 0.18ha Annex I habitat Degraded raised bog still capable of natural regeneration (7120), **Significant**. Permanent loss of c. 2.12ha of cutover bog (PB4), **Significant.** Hydrological effects on raised bog habitat considered negative, long term **Significant,** and Not Significant on cutover bog. Dust emissions, potential **Significant** effect on bog habitats. • Broadleaved Woodland (WD1): Direct loss of c. 0.17ha of Alder/Ash broadleaf woodland, **Significant**. • Hedgerows, treelines and stone walls: Loss of c. 3.74km of linear habitat, **Significant** at a local scale. • Badger: Potential for direct mortality and loss of sett, effect considered Significant on the local badger population. The loss of supporting habitat, which is noted as widespread, effect considered Not Significant. • Otter: No barrier to migration and no loss of riparian habitat impacts. Potential disturbance effects (noise) and indirect effects on water quality affecting food prey biomass availability, considered temporary **Significant**. • Pine Martin and red squirrel: No significant habitat loss, mortality or barrier movement effects predicted. Potential for disturbance of these species, considered Not Significant. • Bats: Confirmed roosts to be avoided, no damage or loss of roost habitat anticipated, and no potential for loss or damage to potential tree roosts, Not Significant. Loss of commuting and foraging habitat, Significant at a local scale. Displacement effect from removal of linear features, Not Significant. Disturbance effects (noise and light), Not Significant. • Marsh fritillary: No loss of suitable marsh fritillary habitat, Not Significant. Potential for direct and indirect mortality effects on breeding marsh fritillary due to proximity, construction works occurring within 17m, **Significant** at County scale. Effect from alteration to hydrological regime, Not Significant.

• Invasive Species: Potential for spread to other habitats. • European designated sites: Assessment refers to the NIS. • National designated sites: Potential for deterioration in groundwater and surface water quality.
c) <u>Operation:</u> • No significant effects predicted on terrestrial habitat, aquatic receptors, badger, otter or marsh fritillary. • Bats: Myotis and brown long-eared bat: Low activity levels recorded, no significant collision risk related effects anticipated. Leisler's bat, Soprano pipistrelle, Common pipistrelle: Assigned low to medium collision risk, effect considered **Significant** (long-term negative) at a local level. Nathusius' pipistrelle: Assigned low collision risk.
d) <u>Decommissioning</u>: • No significant effects predicted.
e) <u>Cumulative:</u> • Considered other wind farms and developments (within 10km of wind farm site), developments (within 200m of GCR) and plans. • The loss cutover bog (PB4) habitats, potential for **Significant** cumulative effect at a local scale as a result of the proposed development in combination with adjacent turbary activities. • No other significant residual disturbance, deterioration of water quality, faunal habitat loss as a result of the proposed development predicted. • No significant residual in relation to disturbance, displacement or mortality of faunal species as a result of the proposed development predicted.

10.6.5. **Mitigation**

In addition to design and avoidance measures, the following measures are noted:

- No instream works proposed. Watercourse crossing methodology within wind farm site e.g. clear span bridge and along GCR e.g. HDD or standard formation.
- Detailed mitigation measures in relation to the protection of surface water during construction as per Chapter 9 of the EIAR. All surface water runoff will be captured and treated.

- Measures detailed in CEMP, Appendix 4-5 and Traffic Management Plan, Appendix 15-5.
- Peat management measures detailed in Appendix 4-2. All turves and sub-peat arising from the initial construction phase will be used to provide a layer of peatland vegetation on top of proposed peat repository areas in the subject site. Includes construction details for floating tracks.
- Pre-commencement surveys by project ecologist and measures to be implement if required.
- Stone walls to be re-instated where possible.
- Bat mitigation measures as per Appendix 6-2 including monitoring and adaptive mitigation strategy.
- Marsh fritillary breeding areas will be fenced off with a minimum buffer of 5m. Construction works area for T05 and associated site access routes will be fully fenced off (with solid hoarding where possible).
- Dust mitigation measures outlined in Chapter 10.
- Avoidance measures to prevent spread of Rhododendron including pre-commencement survey by ecologist and demarcation of invested area.

EIAR also references enhancement measures in BMEP (Appendix 6-4).

10.6.6. **Residual Effects**

- No potential for impact on the designated sites via the identified pathways.
- Aquatic habitats and species: No significant residual effect.
- Peatland: No residual significant impact on peatland habitats adjacent to the development footprint. **Significant** residual effect at a County level through the loss of Annex 1 habitat Degraded raised bog still capable of natural regeneration (7120) and the alterations of drainage as a result of the floating road.
- Peatland: Residual effect on peatland habitats from loss of and alterations to drainage of Annex 1 habitat Degraded raised bog still capable of natural

regeneration (7120), **Significant** at a county level. No residual significant effect on peatland habitats as a result of air quality.

- Other habitats: No significant residual effect. Replanting of broadleaf woodland and hedgerows as per the BMEP, Appendix 6-4.
- Fauna: No significant residual effect on badger, otter, pine martin, red squirrel or Marsh Fritillary. BMEP a positive impact on marsh fritillary and other local invertebrate/pollinator species
- Bats: Loss of commuting and foraging habitat, temporary **Significant** effect at a local scale. No significant residual effects on bats anticipated with regard to loss or damage to roosts, and displacement or collision. Replanting of broadleaf woodland and hedgerows as per the BMEP, Appendix 6-4.

10.6.7. Analysis, Evaluation and Assessment: Direct and Indirect Effects

10.6.7.1. Robustness of methodology

Observers raise concerns in respect of the survey methodologies and survey scope. I have reviewed the scope of the surveys and consider them in accordance with best practice at the time of the survey work. I note that given the extended survey timeframe, that the survey work provides a comprehensive baseline of the subject site and the surrounding area. I have reviewed the methodology of Chapter 6 and note this is in accordance with the CIEEM guidelines (2018, as updated 2022).

Whilst I note the concerns by observers regarding the electronic copies of the biodiversity figures, I am satisfied that these were included in the paper copy of the submission and available for viewing by the public and that subsequent to this, the electronic copy of the biodiversity figures was circulated to all parties of the applications for comments.

Whilst concerns for potential for cumulative impacts with from other renewable energy projects is not assessed, I have reviewed that EIAR and I am satisfied that the Proposed Project potential to result in cumulative effects have been assessed.

Observers have raised concerns that there is no clear biodiversity net gain pathway commensurate with the scale of impact. I have reviewed the BEMP (Appendix 6-4) and I am satisfied that the enhancement and offsetting measures therein provide overall net gain and I have referred to it where relevant in the sections below.

10.6.7.2. **Peatland Ecology**

Observations have raised concerns regarding the impact of the proposed development on peatland habitats and the impact on Degraded Raised Bog. There are concerns that the proposed development will cause a permanent decline in bog habitats and result in hydrological disturbance, and that the impact on bog habitat will extend beyond the footprint of the proposed development. Concerns have been raised regarding the negative impact on bog as a result of the proposed floating access roads. Observers considers that the proposed development contravenes the objectives of the National Biodiversity Action Plan 2023-2030, which seeks to prevent biodiversity loss and policy objectives of the CDP. DAU has noted that 580m of proposed floating road will be located within the mapped Article 17 habitat and 285m corresponds with Annex 1 habitat Degraded raised bogs still capable of natural regeneration (7120).

As above, the bog habitat within the northwestern part of the subject site is mapped as Annex 1 habitat Active raised bogs (7110) in the Article 17 reporting 2019 by NPWS, and referred to as Cooloo Bog. I note the mapping for the Article 17 Reports 2025 is yet to be published at the time of writing. The EIAR has classified the Raised Bog (PB1) habitat within the subject site, where the proposed development overlaps, as Annex 1 habitat Degraded raised bog still capable of natural regeneration (7120) (Appendix 6-1). I have reviewed the habitat mapping and the botanical study carried out for the proposed infrastructure footprint and accept the conclusions therein. The impact on the raised bog from peat cutting along the fringes and drainage are noted. However, I note the limitations in terms of spatial extent of the revelés in the botanical study which focused on the footprint of the proposed development and did not consider adjacent areas of raised bog likely to affected by hydrological changes. As noted above, this raised bog forms part of Cooloo Bog. I note the NPWS Article 17 Reports 2025 states that these two Annex 1 habitats are intimately linked and that the conservation goal for Degraded raised

bog still capable of natural regeneration (7120) is to turn into Active raised bogs (7110). These Annex 1 habitats are groundwater dependent terrestrial ecosystem (GWDTEs).

The EIAR Figure 6-5 shows that the raised bog (PB1) habitat mapped to the north of T5 has been avoided, with the proposed floating access track (measured as approximately 185m) routed along the eastern boundary of the mapped raised bog habitat. The EIAR does not confirm if there is Annex 1 habitat present within this raised bog. I note this is an area of uncut raised bog with existing drainage ditches. The floating access track between T9 and T7 is shown to cross raised bog (PB1) habitat for approximately 285m, with the remainder of the floating track crossing cutover bog (PB4). This area of uncut raised bog forms part of Cooloo Bog, an Annex 1 mapped area. The proposed floating access track divides the eastern corner of the mapped Annex 1 habitat from the larger uncut raised bog area to the northwest. Having reviewed the iterative design process in Chapter 3, I note there is no reference to access tracks being routed to avoid uncut raised bog habitat (PB1) and that the floating access track construction methodology provides the mitigating design measure by avoiding peat excavation and less drainage impacts.

I note a direct loss of 0.18ha of raised bog habitat is stated in the EIAR which corresponds with the proposed road width (5m) and the standard cross section detail for floating access track (dwg. 22098 GDG ZZ XX DR C 0100). Floated access tracks are as per Chapter 4 proposed in areas where the peat depth exceeds 1m and cables trenches are noted to run alongside floating access tracks. The EIAR Chapter 9 concludes that road structures, regardless of the proposed drainage measures, are likely to significantly alter the drainage characteristics of the bog within 50 to 100m of the tracks. The Annex 1 bog habitat is sensitive to dust, and the likely zone of impact is within 20m as per Chapter 10 of the EIAR. The EIAR concludes a significant effect on peatland habitat as a result, however these effects have not been assessed in terms of disruption to groundwater flow feeding the groundwater dependent terrestrial ecosystem. On account of the potential hydrological changes along access floating access track within or adjacent to raised bog habitat, I note on a precautionary basis that an additional approximately 3.7ha of raised bog (PB1) habitat, or as classified in the EIAR Annex 1 Degraded raised bog still capable of natural regeneration (7120), is likely to be directly or indirectly

affected by the proposed development. Whilst degraded raised bog, it is understood to be uncut raised bog. This, in addition to the direct habitat loss, equates to approximately 12.5% of the existing raised bog habitat within the subject site compared with the 0.54% stated in the EIAR.

Given the extended area of direct and indirect hydrological and hydrogeological changes to the existing peatland ecology, I do not consider that the EIAR has provided sufficient level of detail to conclude on the impact on peatland ecology and on the GWDTEs Annex 1 habitat. By establishing the presence of uncut raised bog, an Annex 1 habitat Degraded raised bog still capable of natural regeneration (7120) within the subject site, a consideration on the regenerating capabilities of this habitat or the bog as whole has not been provided. Furthermore, given the limitations of the botanical study, the condition of Cooloo Bog in proximity to the site or as a whole has not been considered. I am, therefore, not satisfied that the overall conservation value of the raised bog within and an adjacent to the subject site cannot be determined.

I note from the EIAR that 21.2ha of cutover bog (PB4) habitat, a non-Annex 1 habitat, is to be lost to the proposed footprint of the development. Similar to the above, there are potential direct and indirect effects associated with hydrological changes. I note all peat excavated is to be reused within the subject site and areas suitable for recolonising with scrub are identified in the BEMA (Appendix 6-4). Observations have raised concerns that there are no proposals for the restoration or rewetting of the peat that will be drained by the proposed works. The applicant has not responded to this matter and there are no rewetting proposals within the BMEP. However, given my conclusion above I do not consider this matter that requires further consideration.

I have addressed the impact from hydrological and hydrogeological changes to peat on aquatic habitat and species below.

10.6.7.3. **Woodland and linear habitats**

Observations have raised concerns regarding the proposed development will result in the loss of forestry, trees and hedgerows that cannot be replaced.

There is an existing 3.8ha of broadleaved woodland (WD1) habitat area within the subject site, south of T9 (Figure 6-5). The woodland consists of alder (2.9ha) and ash (0.9ha) and 0.17ha will be lost as a result of the proposed turning bay and the widening of existing tracks between T8 and T9. The BEMP (Appendix 6-4) notes that the ash woodland is affected by ash dieback. In addition, 11.25ha (70.5%) of existing conifer plantation (WD4) is to be removed near T9 and access road between T9 and T5 to facilitate proposed infrastructure and the proposed planting of with native woodland (BEMP Appendix 6-4). Approximately 3.47km of linear habitat (22% of total) such as hedgerows (WL1) with associated stone walls (BL1) and treelines (WL2) will be lost. From review of Figure 6-5, these are mainly located along the widening of existing tracks, along field boundaries where new tracks are proposed, proposed turbine bat buffers and TDR works.

I concur with the findings of the EIAR that the loss of woodland and linear habitat would not cause significant fragmentation of habitat connectivity. Pre-commencement mitigation measures relating to fauna and birds, and the measures to reinstatement, where possible, of stone walls where possible are noted, and I concur that with the EIAR that the effect would be permanent or long term temporary and significant at a local level.

Whilst enhancement offsetting measures set out within the BEMP (Appendix 6-4) does not mitigate the loss of habitats, such measures will provide a long term positive effect for the local habitat and fauna and include 4.7km of new linear habitat and 11.5ha of broadleaved woodland within the subject site. The location of the proposed broadleaved woodland planting appears to have been missed of Figure 3-1.

10.6.7.4. **Aquatic Habitat and Species including Otter**

Observers have raised concerns that the Proposed Project will aquatic habitat and species, noting that survey data indicates that streams in the subject site and surrounding area host habitats and species of international importance. Concerns have been raised regarding impact on otters, salmon and salmon spawning bed, brown trout and crayfish. Observers have outlined that maintaining the quality of freshwater habitats is important for salmon numbers. Observers note works carried

out by Inland Fisheries Ireland to improve rivers locally, to encourage salmon spawning. The Commission will note the submission by Inland Fisheries Ireland outlines standard measures.

Instream works: Two crossing of the Dangan Eighter Stream (EPA code: 30D35) are proposed, one along the access road to T6 and a second along the access road to T7. The stream is noted to have been deepened and straightened within the subject site, which is evident by the trapezoidal channel with steep peaty banks and a riverbed comprising of deep soft sediment (EIAR Appendix 6-3). Chapter 6 details that clear span crossings over the Dangan Eighter Stream are proposed and that no instream works required and no potential for direct impacts. This crossing methodology corresponds with Chapter 4 which states that the "crossing methodologies presented below will ensure that no instream works are necessary" and that the foundation base "will be excavated along the stream bank with no instream works required" (Section 4.8.3). Chapter 6 references mitigation measures detailed in Section 9.5.2.9 (Chapter 9) which confirms that there will be no direct impact on the Dangan Eighter Stream given the existing banks will remain undisturbed and that no instream excavation works are proposed. In this regard, I note that the access track between T5 and T6 is to be floating track except for at crossing of the Dangan Eighter Stream, where the track is to be founded. Appendix 8.1 (Table 4.2) states that excavated peat is to be replaced to a suitable bearing stratum and that "the peat at the banks of the watercourse in this area will be reprofiled to a more stable slope angle (typically 1V:3H)." This measure to mitigate peat slide risk is reiterated in Tabel 2-1 of Peat and Spoil Management Plan (Appendix 2-1).

Considering the above, the reprofiling of the steep peaty banks of the Dangan Eighter Stream to facilitate the proposed crossing will require works within stream channel. Works impacting on the stream channel have not been mitigated for in Chapter 6, or in Chapter 9 Hydrology and Hydrogeology in the EIAR. Of note, I will also be referring to works within the stream channel when assessing water and peat slide risk and carrying out my appropriate assessment in the following sections.

Peat slide risk has not been identified at the second (northern) crossing of the Dangan Eighter Stream where a floating track with a clear span crossing is being

proposed, I have address this in Section 10.8 below. I am satisfied that no instream works are required at the remaining watercourse crossings within the subject site or along the GCR.

Aquatic Species: The **fisheries** value upstream within the subject site is noted to be poor, with poor suitability for salmonids and lampreys and only Three-spined stickleback recorded at Site A1 (T6 access road crossing) and A5 (south of T7 access road crossing). The fisheries value is noted to improve downstream of the subject site (c. 0.7km from Site A5) with brown trout, lamprey (Lampetra sp.), stone loach and three-spined stickleback recorded at Site D2 along with the presence of salmonid and lamprey nursery and spawning habitats. **White-clawed crayfish** is noted to have been recorded during both the 2022 and 2024 of the Dangan Eighter Stream (Appendix 6-3). The steep peaty banks along the Dangan Eighter Stream are noted to offer suitability for white-clawed crayfish burrowing, and numerous crayfish burrows were recorded at the crossing point for T6 access road (Site A1). Both adults and juveniles white-clawed crayfish were present with a low density recorded at Site A1 increasing to moderate density downstream at Site D2. Surveys did not detect any crayfish further downstream of the subject site on the Grange River and a decline in the Grange River crayfish population is noted in Appendix 6-3. Crayfish plague was detected within the Grange River.

Given reprofiling works of the peaty riverbanks of the Dangan Eighter Stream are proposed, I do not concur with the applicant that the potential for direct effects on aquatic habitats and aquatic species can be scoped out. Considering the findings of survey, the potential for the proposed reprofiling works to impact directly on white-clawed crayfish cannot be ruled out. The applicant has, therefore, not provided sufficient detail to demonstrate that crayfish will be adequately protected during the construction of the proposed watercourse crossing. I further note no mitigation measures to protect the potential spread of crayfish plague has been proposed.

The EIAR assesses the potential for indirect effect on aquatic habitats and species as a result of impacts on water quality. As above, the applicant has not provided sufficient detail to demonstrate that water quality and spawning habitats will be adequately protected during works within the stream channel and that the works will not result in increased sediments, erosion or peat runoff with increased dissolved

organic carbon (DOC) concentrations. Furthermore, I note the mitigations measure to protect water quality outlined in Chapter 6 refers to those detailed in Chapter 9. I have in Section 10.9 below, concluded that the mitigation measures identified by the applicant to protect both surface water and ground water quality taking account of the risk associated with the karst environment and peat stability have not been sufficiently demonstrated.

Otter: As above, otter is noted to be widespread in the surrounding area. The surveys identified a regular otter spraint containing abundant crayfish and diving beetle remains on a boulder at the pipe culvert, approximately 10m northeast of the proposed access track crossing of the Dangan Eighter Stream for T6 (Site A1). The assessment in Chapter 6 reiterates the no instream works and as such, finding there will be no riparian habitat loss as a result of the Proposed Project. The EIAR predicts a temporary significant effect on otter in the form of habitat deterioration and prey reduction resulting from pollution, as above, mitigation measures relating to the protection of water quality has not been adequately demonstrated. I concur with the potential for significant disturbance effects and considered the mitigation measures outlined by the applicant appropriate.

Conclusion: Having regard to the above, it is my finding that the applicant has not sufficiently demonstrated that the Proposed Project will not result in significant adverse direct or indirect effects on aquatic habitat and aquatic species, or in significant indirect effects on otters.

10.6.7.5. Impact on Bats

Observations raise concerns that the subject site is used by several species of bat, bats are strictly protected under EU and Irish law and the proposed development will have a negative impact on bats due to collision risk, disturbance and loss of foraging habitat. Concerns regarding the adequacy of surveys, monitoring and mitigation measures are raised. Concerns that no commitment is made by the applicant to employ mitigation measures to reduce bat mortality and that bat fatalities may be severely underestimated at the subject site. Concerns have also been raised that loss of hedgerows at the subject site will cause habitat fragmentation.

DAU has noted that the location of T8 is close to known common pipistrelle roost with high activity. In terms of bat mitigation, recommends using warm white lighting with a Correlated Colour Temperature (CCT) of below 2700 kelvins.

Bat surveys: Observations have raised concerns that bat surveys are inadequate and that reliance on meteorological data extracted from a station 47 km away to inform site-specific conditions for 16 days in spring represents a fundamental deficiency. Commission will note that DAU has not raised any concerns relating to the methodology or scope of bat surveys carried out for the proposed development.

Having reviewed the submitted documentation, I am satisfied that the bat survey effort and scope followed best practice methodologies available at the time of the survey work, specifically Nature Scot guidance Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation (2021) and in reference to the NIEA guidance (2021) and the BCT Bat Surveys for Professional Ecologists (Collins, 2023). I note the survey scope has been comprehensive with the most recent surveys carried out during April to October 2024 supplementing surveys carried out during the 2021 and 2022 seasons. Whilst I note observers' reference to a study by Behr et al (2013)[5] and pre-construction nacelle-mounted monitoring, I concur with the applicant's Response to Submissions that such monitoring having regard to best practice guidance by Nature Scot (2021) is not applicable to the proposed development.

Furthermore, I am satisfied that the use of weather data extracted from the closest weather monitoring station, approximately 47 km away, for 16 days in spring 2024 as detailed in Appendix 6-2 would not significantly affect the results. I note weather monitoring was also carried out during 2021 and 2022 seasons.

Bats roost and disturbance: DAU has noted the location of T8 in close proximity to a known roost. A small soprano pipistrelle roost is confirmed at derelict Elm Hill farmhouse (Structure No. 9) which is located c. 160m east of T8. I note this distance by applying the NatureScot guidance (2021) equation, exceeds the minimum 50m buffer from a habitat feature. I further note that a larger buffer is not necessarily warrant for a smaller hibernation site. The EIAR states that the linear habitat associated with the roost is not impacted on. Having visited the subject site and

[5] Behr, O., Brinkmann, R., Mages, J., Niermann, I., Korner-Nievergelt, F., & Voigt, C. C. (2023). Standardised and referenced acoustic monitoring reliably estimates bat fatalities at wind turbines. Mammal Review, 53(1), 65–71.

reviewed the location of T8 and Figure 6-5, I concur that the minimum 50m buffer will not significantly impact on foregoing and commuting habitat associated with this roost. Structure No.8 supports a single soprano pipistrelle and is located 550m from T7. In relation to the proposed demolition works (ref. structure no. 6), I note no bat roost was identified during surveys and the EIAR outline that as such, a derogation licence was as such not required. No bat roosts were identified at the watercourse crossings, railway crossing and no potential roost features were identified at trees or treelines scheduled for felling or in proximity to turbines. As noted above, a pre-demolition inspection is to be carried out for Structure No. 6 in line with best practice and to account for any changes in baseline environment. The BMEP (Appendix 6-4) includes additional bat roost potential in the form of bat boxes. Lighting measures have also been proposed, and I have addressed those in a separate section below. I am, therefore, satisfied that the Proposed Project would not result in significant loss of or disturbance effects on bat roosts.

10.6.7.6. **Bats habitat loss, fragmentation and mortality:**

Observers have raised concern regarding high level of bat activity within the subject site and impacts on bats including collision risks, disturbance and loss of important foraging habitat. Observers raise concerns that bats forage along rivers and streams and that mortality impact is not just from strikes but from lungs exploding (barotrauma). Concerns have been raised that the assessment of mortality risk to be inadequate failing to meet scientific standards for acoustic monitoring and mitigation.

The majority of the habitat within the subject site is noted to be of negligible or low suitability to support foraging and commuting. Hedgerows, treelines, lowland/depositing rivers, drainage ditches, scrub and conifer plantation edges habitats are considered to be of moderate suitability. The EIAR confirms that the proposed turbines have been located to avoid significant bat roosts and to avoid habitat fragmentation including high-quality commuting and foraging areas. As above, having reviewed the turbine layout and habitats of moderate suitability as shown on Figure 6-5, I concur with the EIAR that the minimum 50m felling buffers will not significantly impact on the overall connectivity. Proposals to plant supporting foraging and commuting habitat with a net gain of approximately 960m of linear

habitat within the subject site is noted (BMEP, Appendix 6-4). Concerns have been raised by observers with regard to proximity of turbines to streams and rivers, however, I am satisfied that these have been avoided taken account of the buffer to surface water features (Chapter 9 of the EIAR) and achieves the minimum 50m buffer (NatureScot, 2021) with the exception of T9.

As above, bat activity levels recorded are noted in the EIAR to be representative of the habitat composition within the subject site. I note all bats recorded whilst included as Annex IV species, are all classified of 'Least Concern' on the Irish Red List (2019). The most frequently recorded species across spring, summer and autumn were Common pipistrelle and Soprano pipistrelle, and both are high collision risk species and considered to be of medium population vulnerability. Other high collision risk species recorded within the subject site were Leisler's bat and Nathusius' pipistrelle, and both species considered to be of high population vulnerability. Activity levels recorded for Myotis spp. and Brown long-eared bat were low and both are considered low collision risk species, and no significant collision risk effects are predicted. As above, Lesser Horseshoe bat was recorded twice during 2022 survey and is also a low-risk species.

The EIAR assess the overall typical activity levels collision risk for Soprano pipistrelle, Leisler's bat and Nathusius' pipistrelle to be Low across all seasons and as Low for Common pipistrelle during summer and autumn and Medium in spring. At peak activity levels, the risk classification for Common pipistrelle and Soprano pipistrelle is Medium. High activity levels were recorded in spring in proximity to T2, T3, T7 and T8 for Common pipistrelle and in autumn for Soprano pipistrelle in proximity to T1. I also note high levels of common pipistrelle and soprano pipistrelle activity were recorded west of T7 in 2022 (D08). Peak activity levels for Leisler's bat are classified as Medium during autumn in proximity to T4 and as Medium for Nathusius' pipistrelle during spring. High activity levels (2024) recorded for Leisler's bat, recorded in summer in proximity to T2 and in autumn in proximity to T4, and I note High peak activity levels recorded for Leisler's bat north of T3 (D04) during autumn in 2022. Localised high activity is noted to reflect the positioning of detectors adjacent to suitable foraging and commuting habitat. The Commission will note comments by DAU that Common pipistrelle activity is high around T8, however

the results indicate higher activity levels near T7 which I note is also consistent with 2022 data.

As above, the predicted effects on these bat species as a result of their potential interaction with wind turbines without mitigation measures are significant at a local scale and not significant taking account of mitigation measures. Whilst I note concerns raised by observers in relation to barotrauma, I note that in the context of 'collision' the NatureScot guidance (2021) includes "any form of injury or mortality associated with the operation of wind turbines, i.e. it includes mortality due to barotrauma" and this is confirmed by the applicant in Appendix 6-2. Mitigation measures proposed by the applicant to reduce impacts on bats include the 50m felling buffers, feathering of blades and a three year post-construction monitoring plan which includes for curtailment should this be required. As above, having regard to the NatureScot guidance (2022), I do not consider nacelle-mounted monitoring at post-construction stage applicable to the proposed development, given the proposed turbines are not proposed to be key-holed within woodland where bat activity above tree canopy is a potential. Having regard to the habitat on site, the location of proposed turbines and bat activity already recorded within the subject site, I am satisfied that monitoring can be carried out by ground-based equipment.

Derogation: Observations have raised concerns that a derogation licence is required where zero risk to bats have not been demonstrated. The Commissions will note that DAU has not raised any requirements for a derogation licence.

I have considered the Wildlife Acts and the Habitats Directive. As above, I am satisfied that roost surveys have been carried out and that the Proposed Project does not result in significant residual effects with regard to loss or damage or disturbance of breeding place or resting sites of bats. In relation to the proposed demolition works (ref. structure no. 6), I note no bat roost was identified during surveys and the EIAR outline that as such, a derogation licence was as such not required. I note a pre-demolition inspection is to be carried out in line with best practice and to account for any changes in baseline environment. Furthermore, as outlined above, I am satisfied that bat surveys in line with best practice has been carried out and the potential interactions of the Proposed Project with bats have been assessed and measures to avoid and mitigate impacts on bats have been

identified. I am, therefore, satisfied that the Proposed Project has been designed to avoid deliberate impacts on bats.

Artificial Lighting: Concerns have been raised regaling impact on bats from lights. The applicant's Response to Submission commits to the use of bat-sensitive lighting in accordance with ILP Guidance Note 08/23: Bats and Artificial Lighting at Night and warm white lighting with a correlated colour temperature (CCT) of ≤2700K as requested by DAU. Outlining that where lighting is required, directional lighting will be used, designed to minimise upward and lateral light spill, and will be directed away from mature trees and treelines. The EIAR notes that aviation lighting will provide limited illumination, and that monitoring programme proposed will consider any potential for lighting-related impacts on bats.

Conclusion: Having regard to the above, I am satisfied that the applicant has sought to minimise the loss of hedgerow and treelines habitats within the design process of the proposed development in order to reduce the impact on foraging connectivity and habitat fragmentation not only for bat species. As outlined previously, I am satisfied that hedgerow planting within the subject site will provide long term biodiversity benefits. I am, therefore, taking account of mitigation measures satisfied that the proposed development will not result in significant adverse effects on bats.

10.6.7.7. Marsh Fritillary

Observations have raised concerns regarding the potential impact on Devils Bit Scabious and marsh fritillary, an Annex II species, from construction disturbance, dust and drainage. DAU notes the presence of Marsh Fritillary in proximity to T5, and the potential for works to result in changes in hydrological regime of cutover bog (PB1) habitat and affect the suitability of habitat for Marsh Fritillary.

I note from the EIAR that the subject site has been surveyed for suitable habitat, Devil's Bit Scabious (Succisa pratensis) and that were suitable habitats were identified, these were subject to marsh fritillary survey in 2024. Multiple larva webs were recorded in a field to the east which no longer forms part of the development footprint and forms part of measures outlined in the BMEP (Appendix 6-4) to enhance the suitability of this habitat. A singular larva web was recorded north of

T5, and 17m[6] from the hardstand/new access road associated with T5. The larva wed recorded is noted to be located within vegetation on the banks of a drain within cutover bog habitat (PB4) which was noted to be actively cut for peat extraction at the time of the survey. This marsh fritillary breeding areas is to be fully fenced off prior to construction with a minimum 5m buffer. I note the EIAR confirms that the proposed development footprint does not overlap with suitable marsh fritillary habitat.

Considering, I am satisfied that there will be no direct loss of suitable marsh fritillary habitat as a result of the proposed development and that existing recorded breeding areas have been avoided, this along with proposed enhancement measures to create additional suitable habitat will ensure no significant effects on the meta population of the species. However, no pre-commencement survey forms part of the mitigation measures. Considering indirect effects, I note the existing breeding area near T5 is located within an active cut over bog area and near existing drains and at a distance of 17m from the works areas. The applicant's Response to Submissions refers to the findings of the assessment in Chapter 9 that given existing drainage and cutover nature no significant additional effects on remaining areas of intact bog are anticipated. Given the location of the existing breeding area, I concur with the findings of the EIAR that alteration to the hydrological regime is unlikely to result in significant effects. In terms of dust effects, I note groundworks within 20m of recorded marsh fritillary webs to be supervised by an ECoW on a daily basis for potential signs of dust deposition and in the event of habitat degradation, works are to be halted and further mitigation implemented.

In the event the Commission is minded to grant permission, a pre-commencement marsh fritillary survey should be conditioned.

10.6.7.8. **Other Fauna**

Observers have raised concerns regarding impact on badgers, pine martin, red squirrel and common newts and note the strict obligations to avoid adverse impacts on these species and their conservation status.

[6] Referred to as 20m in the BMEP, Section 2.2.2.

The proposal states that there is no evidence of badgers; however, badger runs have been observed in Elm Hill and in the forest next to turbine 9. Additionally, badgers only come out at nighttime. During this time, MKO did not monitor the area.

Badgers: Observations have raised concerns regarding impact on badgers, highlighting their presence within the area and potential disturbance leading to spread of bovine tuberculosis (bTB). As above, the EIAR confirms that badgers are present in the vicinity of the subject site, and suitable badger habitat is noted within the subject site and found to be widespread within the surrounding area. Whilst no badger setts were recorded, the EIAR recognises the potential for a sett to be created in the intervening period. Whilst the concerns regarding the spread of bTB is noted, I am satisfied that the proposed development would not result in significant adverse effects on badger in terms of habitat loss, fragmentation, disturbance or mortality and that mitigations measures including pre-commencement survey of to check for any badger setts will ensure that any new constraints are identified in order to be mitigated further.

Red Squirrel and Pine Martin: The EIAR confirms the presence of both pine martin and red squirrel in the vicinity of the subject site. A small footprint of suitable woodland habitat within the subject site is noted for both species. Whilst no pine marten dens or red squirrel dreys were recorded, the EIAR recognises the potential for red squirrel to build a drey or for a pine martin to create a den in proximity or within the development footprint in the intervening period. Having regard to this, I am satisfied that the proposed development would not result in significant adverse effects on these species in terms of habitat loss, fragmentation, disturbance or mortality and that mitigations measures including pre-commencement survey of to check for any red squirrel drey or pine martin den will ensure that any new constraints are identified in order to be mitigated further.

Reptiles and Amphibians: As above, the EIAR confirms the presence of common frog and common lizard within the subject site. Common newt as referred to by observers were not recorded during surveys. The EIAR also confirms the presence of suitable habitat for reptiles and amphibians within the subject site, but that no evidence of significant breeding sites or significant populations were identified. I am satisfied that the baseline of the EIAR considered in sufficient detail the potential for

reptiles and amphibians to utilise the subject site taking account of survey findings and the presence of suitable habitats, and that the proposed development will not result in a significant loss of such habitat. On account of these findings, the potential for significant effects were unlikely and these species were scope out of further assessment within the EIAR. I consider this acceptable.

Insects: Whilst I note concerns raised by observers regarding impact on bees and other insects, I am satisfied as per my assessment above that the proposed development will not result in a significant loss of suitable habitat such as hedgerows. I note the measures proposed in BEMP (Appendix 6-4) will provide pollinator foraging habitat within the subject site and the embankments and berms will provide soil for nesting pollinators including bee species.

10.6.8. Conclusion: Direct and Indirect Effects

Having regard to the examination of environmental information in respect of ornithology in particular the EIAR and technical appendices, I am satisfied that a number of the impacts identified on biodiversity would largely be avoided, managed or mitigated by the measures forming part of the proposed scheme or by appropriate conditions. However, I am not satisfied that sufficient level of detail has been provided to conclude on the ecological value, implications of the proposed development for Annex 1 bog habitats and the impact on peatland ecology of the raised bog habitat within Cooloo Bog. Given the potential for instream works, and my assessment of peat instability in Section 10.8, I am not satisfied that it has been sufficiently demonstrated that the Proposed Project will not result in significant adverse direct or indirect effects on aquatic habitat and aquatic species, or in significant indirect effects on otters.

As noted previously, further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

10.7. Birds

Chapter 7 of the applicant's EIAR deals with birds and the following appendices:

- Appendix 7-1 Survey Effort

- Appendix 7-2 Species List
- Appendix 7-3 Summary Data
- Appendix 7-4 Survey Data
- Appendix 7-5 Confidential Survey Data
- Appendix 7-6 Collison Risk Assessment
- Appendix 7-7 Bird Mitigation Plan
- Appendix 7-8 Bird Monitoring Programme

Biodiversity is dealt with in Chapter 6 and hydrology and hydrogeology in Chapter 9 of the EIAR. Biodiversity Management Enhancement Plan is included in Appendix 6-4 and the CEMP in Appendix 4-5, respectively.

10.7.1. **Issues Raised**

A number of observations have raised concerns regarding impact on bird species, bird habitats, surveys and mitigation methodologies.

DAU has summarised the findings of the EIAR for hen harrier, merlin, peregrine falcon, whooper swan, barn owl, kestrel lapwing, swift, shoveler, buzzard, long eared owl and golden plover, and queried the effectiveness of the mitigation measures proposed for golden plover.

10.7.2. **Context**

- Ornithological field surveys are noted to have been carried out between October 2019 to March 2022 and from August 2023 to March 2025, consisting of three breeding seasons and five winter seasons. Surveys are detailed in Appendix 7-1.
- The survey approach adopted is noted to have been based on relevant best practice guidance at the time of surveys and in accordance with Scottish Natural Heritage (SNH, 2017).
- A site-specific scope for ornithological surveys was devised for identified target species.

10.7.3. **Baseline**

Baseline is set out in Section 7.3 of the EIAR and the identified Key Ornithological Receptors (KOR) include:

- Golden Plover (wintering) – Recorded roosting on three occasions, in cutover bog c. 390m from proposed turbines and at Horseleap Lough to the south. Birds recorded using the subject site, at a proposed turbine location and surrounding area for foraging. Birds present in nationally important numbers. High Sensitivity. **National importance.**
- Hen harrier (wintering) – Birds recorded using the subject site for hunting. Regularly used roost 700m northeast of nearest turbine and a bird recorded roosting on one occasion at 420m and another occasion at 500m from nearest turbine. High Sensitivity. **County importance**.
- Lapwing (wintering) – Birds recorded using the subject site for foraging and roosting on one occasion. Roosting and foraging activity recorded at Horseleap Lough and wider area. Birds present in nationally important numbers. High Sensitivity. **National importance**.
- Merlin (wintering) – Birds recorded using the subject site for hunting. Recorded roosting in the hen harrier roost, 700m northeast of nearest turbine. Medium Sensitivity. County importance.
- Peregrine Falcon (wintering and breeding) – Birds recorded using the subject site for hunting. Breeding territory identified 2.4km west of the subject site. Medium Sensitivity. County importance.
- Whooper swan (wintering and passage) – Birds recorded using the subject site for foraging/resting at three occasions. Recorded roosting at Horseleap Lough and foraging in fields to the north of this wetland. Medium Sensitivity. County importance.
- Kestrel (breeding and winter) – Two breeding territories recorded that overlap with the subject site. Birds recorded regularly using the subject site and surrounding area for hunting during both seasons. Medium Sensitivity. Local importance (Higher Value).

- Snipe (breeding and wintering) – Recorded one breeding territory that overlaps with the subject site. Birds regularly using the bog within the subject site and surrounding area during winter season. Medium Sensitivity. County importance.
- Barn owl (wintering) – No observations within the subject site. Signs of barn owl in derelict building proposed to be demolished, no signs of breeding. Low sensitivity. Local importance (Higher Value).
- Buzzard (breeding and wintering) – Recorded one breeding territory that overlaps with the subject site. Birds regularly using the subject site and wider area for hunting in both seasons. Low sensitivity. Local importance (Higher Value).
- Long-eared owl (breeding) – Recorded one breeding territory that within the subject site, in trees to be felled. Low sensitivity. Local importance (Higher Value).
- Sparrowhawk (breeding and wintering) – Birds recorded using the subject site for hunting. Possible breeding territory recorded outside the subject site, c. 800m from nearest turbine. Low sensitivity. Local importance (Higher Value).

Other targeted species (not KOR): little egret, kingfisher, common gull, curlew, grey wagtail, meadow pipit, redwing, swift, shoveler and woodcock.

Lough Corrib SPA within zone of influence as per NIS.

10.7.4. **Potential Effects**

Table 10.4: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • The general biodiversity would likely remain similar to its current state as activity levels and land use would not change.
b) <u>Construction:</u> • TDR works: Removal of hedge to south of Horseleap Lough, surrounding suitable habitat and potential disturbance effects. Likely short-term negative and slight.

- GCR (public road): Proximity to Horseleap Lough, potential for disturbance. Likely short-term negative and slight.

Direct habitat Loss and disturbance:

- Magnitude of effects on KOR species ranging from Low to Medium, predicted effects likely long-term negative not significant to slight, Not Significant.
  - Golden Plover: Not dependent on the subject site for roosting, and not regularly using or dependent on subject site for foraging. Not dependent on the areas within displacement distance of turbines for foraging or roosting, and farmland habitat not scarce.
  - Hen harrier: No habitat loss at roost and no works within disturbance distance of roost, extensive hunting habitat remaining.
  - Lapwing: No habitat loss at waterbodies, and bog habitat not scarce in the wider area. No disturbance effects expected.
  - Merlin: Distance to roost and extensive hunting habitat remaining.
  - Peregrine Falcon: Distance to territory, low frequency, and extensive hunting habitat remaining.
  - Whooper swan: Not dependent on the subject site for roosting and grassland habitat not scarce within surrounding area. Waterbodies used by whooper swans greater than 600m from works. Low frequency of whooper swans occurring within the subject site.
  - Kestrel: Breeding territory present, abundance of similar suitable habitat.
  - Snipe: Breeding territory present, abundance of similar suitable habitat.
  - Barn owl: Loss of a feature used by barn owl.
  - Buzzard: Breeding territory present, abundance of similar suitable habitat. Temporary disturbance of breeding territory.
  - Long-eared owl: Trees with breeding territory to be felled, suitable nesting trees will remain elsewhere outside disturbance distance.
  - Sparrowhawk: Abundance of similar suitable habitat.

c) <u>Operation:</u>

Designated sites: Chapter 7 refers to the NIS and concludes that the “Proposed Project will not have an adverse impact on any European Sites designated for birds, either alone or in combination with other plans or projects.”

Displacement and barrier:

- Magnitude of effects on KOR species ranging from negligible to Low to Medium, predicted effects likely long-term negative not significant to slight, Not Significant.

  - Golden Plover: Not dependent on the areas within displacement distance of turbines for foraging or roosting, and farmland is not scarce.
  - Hen harrier: Layout avoids bog where majority of hunting activity recorded, and extensive hunting habitat remaining.
  - Lapwing: No significant displacement expected.
  - Merlin: Distance to roost, and extensive hunting habitat remaining.
  - Peregrine Falcon: distance to breeding territory, and extensive hunting habitat remaining.

- Whooper swan: Some displacement of foraging flocks from fields north of Horseleap Lough.
- Kestrel: Two breeding territories overlap subject site, and abundance of similar suitable habitat.
- Snipe: Breeding territory within the subject site, and abundance of similar suitable habitat.
- Barn owl: No significant displacement effect anticipated.
- Buzzard: Potential displacement at breeding territory within 500m of nearest turbine.
- Long-eared owl: Suitable nesting trees will remain elsewhere but will limit some nesting opportunities.
- Sparrowhawk: Displacement not expected, and abundance of similar suitable habitat.

Collision risk – KOR species:

- Magnitude of effect medium, effect is likely long-term negative **Significant** for:
  - Golden plover: highest collision risk has been calculated at 197.810 collisions per year, potentially increase the annual mortality of the county population by 12%.

- Magnitude of effect ranging from negligible to low, effect is likely long-term negative not significant to slight, Not Significant for:
  - Hen harrier: Highest collision risk calculated at 0.005 collisions per year.
  - Lapwing: Highest collision risk during the winter season calculated at 31.863 collisions per year, potentially increase the annual mortality of the county population by 1.9%.
  - Merlin: Highest collision risk during the winter season calculated at 0.003 collisions per year.
  - Peregrine Falcon: highest collision risk has been calculated at 0.044 collisions per year, potentially increase the annual mortality of the county population by 0.4%.
  - Whooper swan: Highest collision risk has been calculated at 1.897 collisions per year, potentially increase the annual mortality of the county population by 0.6%.
  - Kestrel: Highest collision risk has been calculated at 1.235 collisions per year, potentially increase the annual mortality of the county population by 0.3%.
  - Snipe: Highest collision risk calculated at 3.066 collisions per year, potentially increase the annual mortality of the county population by 0.1%.
  - Buzzard: Highest collision risk calculated at 2.118 collisions per year. Population size increases noted.
  - Long-eared owl: Highest collision risk calculated at 0.002 collisions per year.
  - Sparrowhawk: Highest collision risk calculated at 0.034 collisions per year, potentially increase the annual mortality of the county population by 0.02%.

- No collision risk effect on Barn owl.

d) Decommissioning: • Direct habitat loss: No effect on KOR species. • Disturbance: As per construction phase for KOR species.
e) Cumulative: • Golden Plover, Hen harrier, Merlin, Peregrine Falcon, Whooper swan, lapwing and snipe: Magnitude of effect Low, significance Low. Effect is likely long-term negative slight, Not significant. • Barn owl, kestrel, buzzard, long-eared owl and sparrowhawk: Magnitude of effect negligible, significance Very Low. Effect is likely long-term negative not significant.

10.7.5. **Mitigation**

In addition to the design and avoidance measures, the following mitigation measures are noted:

- Industry best practice measures detailed within the CEMP.
- Golden plover: Bird mitigation Plan (Appendix 7-7) to reduce collision risk effects.
- Barn owl: Enhancement measures include barn owl box close to derelict building to be demolished.
- Bird Monitoring Plan (Appendix 7-8) targeting KOR species during construction, operational (years 1, 2, 3, 5, 10 and 15) and decommissioning phases with reporting to PA and NPWS.

10.7.6. **Residual Effects**

- Significance of residual effect not greater than Low for any KOR. Residual effect with regard to direct habitat loss, disturbance/displacement or collision mortality would be Slight and Not Significant.

10.7.7. **Analysis, Evaluation and Assessment: Direct and Indirect Effects**

10.7.7.1. **Robustness of methodology**

Observers raise concerns in respect of the survey methodologies and survey scope, that the submitted Collision Risk Assessment is inaccurate because the modelling does not use in-situ or local field data, and the survey coverage is limited.

Survey methodology: I have reviewed the scope of the surveys (Appendix 7-1) and consider them in accordance with best practice at the time of the survey work. I note that given the extended survey timeframe, that the survey work provides a comprehensive baseline sample for the subject site and the surrounding area of both breeding and non-breeding seasons. I note the applicant's Response to Submissions that the NatureScot (2025) was updated post completion of the survey work for the Proposed Project, but that the survey methods employed for the Proposed Project remain consistent and compliant with the updated guidance in NatureScot (2025).

I note the limitations associated with the vantage point survey and viewshed as outlined within the EIAR, a reflection of the local topography. I am, however, satisfied that this does not undermine the assessment of impacts. I note vantage point survey data for a number of bird species has been included, as confidential survey data in Appendix 7.5.

Whilst concerns by observers are noted regarding survey efforts for migratory and overwintering species, including Whooper Swan, I am satisfied that the survey scope reflects the target species and include dawn and dusk survey effort. The applicant has not provided a separate project-specific nocturnal flight-activity dataset, however, I do not consider this fundamental methodological data gap. The applicant has confirmed that nocturnal flights have been accounted for in the collisions risk assessment which I note accords with the NatureScot guidance (2025).

Whilst I note the reference by observers to the Bird Survey Guidelines for assessing ecological impacts by the Bird Survey & Assessment Steering Group (2025, updated 2026), these postdates the survey work for the Proposed Project and are not consider best practice for surveying birds in relation to wind farm developments.

Determination of significance: The methodology in Chapter 7 of the EIAR references Percival (2003). It is considered that there are limitations to be had in applying this methodology, in particular in the determination of magnitude of the

possible impacts that may occur on those species/populations given its age. Percival also notes that "the impact of such collisions at the population level can be very different between different species" and that at "some species of particular conservation importance it may be that 'acceptability threshold' would be better set at a lower level." I have taken account of this in my assessment in the following sections.

Collision Risk Model (CRM): The applicant's Response to Submissions outlines the approach in the NHS (2017) guidance builds on the Band et al. (2007) model used in the EIAR and is the standard modelling methodology for onshore wind farms. The applicant's response also outlines that the updated Band (2024) and NatureScot (2024) should not differ substantively for the application of the SNH 2017 guidance. Whilst this is noted, it is, however, not clear given the assessment timescale permitted so why the applicant's approach did not reference the updated CRM guidance. I have reviewed the avoidance rates used in the CRM (Appendix 7-6) and note that these where species specific ones are available, align with the NatureScot guidance (2025), including the 99.5 avoidance rate applied to whooper swan as queried in submissions. The avoidance rate for golden plover in the EIAR is noted to be 99.6% and based on a study of post construction collision monitoring at three UK wind farms sites by Tom Gittings (2022), this was commissioned by MKO and is included in Appendix 7-6. NatureScot (2024) does not provide a species-specific avoidance rate for golden plover and recommends in the absence of "specific avoidance information for the species in question, it is recommended that collision risks be evaluated assuming avoidance rates of 95%, 98%, 99% and 99.5%." I have addressed the matter of precautionary approach and providing a range in my assessment of golden plover below.

10.7.7.2. **Bird species**

Observers raised concerns that the proposed development will impact upon a number of bird species, specifically referenced are migratory species such as whooper swans, breeding waders including golden plover and northern lapwing, raptors including hen harrier, kestrel, merlin and peregrine falcon and barn owls. Concerns have also been raised regarding the bird mitigation management plan and the long term ecological management or monitoring strategy.

Whilst I note reference in submissions to a variety of different bird species, I have reviewed the EIAR, and I am satisfied that the Proposed Project is not likely to result in significant adverse effects due to habitat loss, disturbance, displacement, barrier or collision risk effects on bird species that are not identified as KOF within the EIAR. As above, I am satisfied that surveys which has informed the EIAR were informed by target species for the subject site and surrounding area. Furthermore, I note that passerine species are not generally considered to be significantly impacted by wind farms. I have considered the potential for proposed development to result in significant effects on the identified KOF species in the following sections.

Observers raise concerns that the submitted documentation does not provide sufficient information to meet the requirements of the Birds Directive or the Habitats directive in respect of the protection of migratory and resident birds. I am satisfied, having regard to intervening distance and foraging distance, that the recorded bird species are not linked to the Lough Corrib SPA or any other natura 2000 sites as per Section 11 below.

Golden Plover

Roost areas for golden plover were recorded to the west and the south of the subject site in the EIAR. Foraging was recorded within the subject site, and in close proximity to the subject site to the west and in a central location. The majority of flight activity recorded appears to be associated with the roost areas and overlaps turbines within the southern and western part of the subject site. I note large flocks of birds were recorded within the subject site and the surrounding area. The EIAR has considered a 500m buffer to roosting areas and confirms that both recorded roosts, to the west and the south of the subject site are located outside this buffer. I note the NatureScot guidance (2022) recommends a non-breeding season buffer zone of 200 to 500m for roosting and foraging golden plover. Whilst foraging was recorded within the subject site, the EIAR concluded that golden plover is not regularly using or dependent on the habitat within the subject site and noted access to an abundance of similar habitat within the wider area. I concur with the findings of the EIAR that the Proposed Project is not likely to result in significant adverse habitat loss or disturbance effects on golden plover.

A high collision risk is predicted, the 197.810 birds per year is based on both random (196.200) and regular flight activity from Horseleap Lough (1.610). This increases the annual mortality of the county population by 12%. I note Chapter 3 of the EIAR does not outline any layout design measures to reduce the collision risk of golden plover. The applicant proposes mitigation measures in the form of tethered bird control kites to deter golden plover from foraging or roosting on grassland and to reduce flight activity in fields around T1 (Appendix 7-7). Of note, turbine curtailment is not considered in Appendix 7-7. I note the study by O'Shea et al (2020) as referenced in the EIAR (Appendix 7-7), found that the presence of hawk-kites near airfields reduced the number of flyovers made by wood pigeons, recorded more evasive behaviour in <30m height flights then in >30m flights, did not conclude that imitation hawk-kites eliminate the risk of bird strikes and recommended such measures be considered on a case by case basis. The Commission will note that DAU raised concerns that the applicant has not provided any analysis to show by how much the numbers will potentially be reduced.

In the Repose to Submission, the applicant outlines that whilst there has not been the opportunity to test the effectiveness of said mitigation measure in reducing collisions at wind farms, tests carried out for crop protection and at reducing bird numbers/flyovers in airfields and landfill sites are relevant given the purpose of the measure is to deter foraging or roosting activity. Applicant's response seeks to quantify the mitigation measure and the revised CRM workings removes all golden plover flights in the area in which the kites are proposed. The revised increase in the annual mortality of the county population is 3.6% (56.627 per year), and the applicant applying the Percival methodology concludes a low magnitude of collision risk and a not significant residual effect. The bird monitoring programme in Appendix 7-8 is also noted.

Having regard to the above, I am not satisfied that the applicant has adequately demonstrated that the proposed mitigation measures will reduce the significance of collision risk effects on golden plover to not significant. Furthermore, having regard to the limitations of the 2022 study by Tom Gittings in relation to pre-construction activity data analysis and recommended approach by NatureScot (2024), I consider a range of avoidance rate should have been applied to the CRM as a precautionary approach. Considering the applicant's revised CRM workings for mitigation

measures, I note the same reduced annual mortality of the county population (3.6%) can be achieved by removing proposed T1. The revised annual mortality rate for the Proposed Project equates to a third of the county population over the life span of the proposed development, and I consider this high when considering the national importance of the wintering golden plover population and the limitations of the CRM in not having applied a range of avoidance rates. Furthermore, and having reviewed the survey data, I note the high flight activity which overlaps with the western part of the subject site and specifically T6, and in proximity to the roost area (GP-1).

Considering foraging activity, collision risk and national population importance, there is potential for the Proposed Development to result in a significant displacement, barrier and collision risk effects on the wintering golden plover population, at a county level or more. In the event the Commission is minded to grant permission, a condition omitting turbines T1 and T6 should be considered.

Other Waders

Lapwing: Lapwing was recorded roosting and foraging within the southwestern part of the subject site on one occasion and regularly at or near Horseleap Lough. Flight activity was largely associated with Horseleap Lough and the southern parts of the subject site. Breeding was also recorded at Horseleap Lough, but no flight activity by lapwing was recorded within the subject site during the breeding season. Taking account of pre-commencement mitigation measures and availability of alternative suitable habitat, I am satisfied that the proposed development would not result in significant habitat loss or disturbance effects. However, considering foraging activity, collision risk and national population importance, there is potential for the Proposed Development to result in a significant displacement, barrier and collision risk effects on the wintering lapwing population, at a local level. This effect would be moderate and Not Significant.

Snipe: A breeding territory was recorded in the bog overlapping within the northern part of the subject site and another one to the northeast of the subject site. Snipe was frequently recorded flying within the subject site and during all seasons. Concentrations of flight activity around the breeding territory within subject site and at Horseleap Lough and the bog to the northwest of the subject site. Works will occur within the recorded breeding territory. Taking account of pre-commencement

mitigation measures and availability of alternative suitable habitat, I am satisfied that the proposed development would not result in significant habitat loss, disturbance, displacement or barrier effects. However, considering breeding and flight activity, collision risk and population, there is potential for the Proposed Development to result in significant collision risk effects on the breeding snipe population at a local level. This effect would be moderate and Not Significant.

Hen harrier

No signs of hen harrier breeding were recorded during surveys. A regular hen harrier roost (3-4 birds) was confirmed to the northeast of the subject site (HH-1) and an irregular roost to the west. A third potential roost was noted at Cloonascragh to the west but not confirmed. All flight activity recorded was individuals, mainly hunting or travelling through.

The NatureScot guidance (2022) recommends a buffer zone for non-breeding season buffer zone of 300 to 750m for roosting birds and a larger buffer zone of 500m to 1km, similar to that referenced in the assessed by the applicant where high potential for visual and audial disturbance exists. The EIAR confirms that the regular roost area (HH-1) is located more than 700m from the proposed turbines, whilst the irregular roost is located 600m from the nearest proposed turbine. I concur with the findings of the EIAR that the Proposed Project is not likely to result in significant adverse habitat loss or disturbance effects on hen harrier. I further concur with the EIAR that the Proposed Project is not likely to result in significant adverse displacement or barrier effects on golden plover. As above, the result of the collision risk modelling in Appendix 7-6 is 0.005 collisions per year and, I am satisfied that the Proposed Project will not result in significance collision risk effects on hen harriers.

Other Raptors and owls

Buzzard: Recorded breeding territories to the south and north of the subject site (over 1.5km proposed turbines) and one within the subject site and flight activity are noted to be associated with the northern and southern parts of the subject site. No regular roost was confirmed. The EIAR considers a 400m disturbance buffer zone, and I note NatureScot guidance (2022) recommends a 100-200m disturbance buffer for breeding. Works will occur within this buffer as noted within the EIAR. Taking

account of pre-commencement mitigation measures and availability of alternative suitable habitat and location of breeding territories, I am satisfied that the proposed development would not result in significant habitat loss or disturbance. Considering recorded flight activity and breeding activity within the subject site and surrounding area and collision risk, and allowing for the recent upward trend at nationally population levels, it is the potential for the Proposed Development to result in a significant displacement or barrier or collision risk effects at a local population level. This effect would be moderate and Not Significant.

Kestrel: Recorded breeding territories overlaps with the subject site to the northwest, concentrating on the raised bog habitat and recorded flight activity during largely corresponds with this area. No regular roost was confirmed. The EIAR considers a 200m disturbance buffer zone, and I note this aligns with recommended buffer for breeding in NatureScot guidance (2022). Works will occur within this buffer as noted within the EIAR. Taking account of pre-commencement mitigation measures and availability of alternative suitable habitat and location of breeding territories, I am satisfied that the proposed development would not result in significant habitat loss or disturbance effects. Considering breeding activity, collision risk and population, I am satisfied that the proposed development would not result in significant displacement, barrier or collision risk effects at any population levels.

Merlin and Peregrine falcon: Merlin and peregrine falcon were recorded hunting within the subject site, although a low frequency of activity recorded within the subject site. Sparrowhawk was also observed on occasion hunting within the subject site. The nearest breeding territory for peregrine falcon is over 3.8km from the subject site. Merlin was recorded roosting within the hen harrier roost (HH-1), and this is located outside recommended disturbance buffer as per the EIAR and NatureScot guidance (2022). A possible breeding territory for sparrowhawk was observed in the bog to the west, c. 450m from the subject. I am satisfied that that the proposed development would not result in significant habitat loss, disturbance, displacement, barrier or collision risk effects on any of these raptor species.

Barn owl and long-eared owl: I am satisfied that the felling of suitable nesting trees for long-eared owl and the demolition of the derelict, taking account of pre-commencement mitigation measures and availability of alternative suitable habitat,

that the proposed development would not result in significant habitat loss. Furthermore, I am satisfied that the proposed development would not result in significant disturbance, displacement, barrier or collision risk effects on barn owl or long-eared owl. The barn owl box and monitoring is noted (Appendix 7-8).

Whooper swans

The EIAR has considered a 600m buffer towards the roost and this is noted to align with NatureScot guidance (2022) recommended non-breeding season buffer zone of 200 to 600m to protect foraging and roosting. The roost recorded at Horseleap Lough is located approximately 800m to the south of the proposed development, although temporary works associated with GCR and the TDR will be carried out adjacent to the waterbody. I note foraging is occurring in the fields north of Horseleap Lough in close proximity to the subject site and within the subject site on occasions. A large portion of the flight activity was also recorded in around Horseleap Lough and in the area north of waterbody towards the subject site. I note a number of observations from VP1 relates to birds flying north to feeding ground and out of site. A feeding distribution survey given the proximity of the Proposed Project to the roost does not appear to have been carried out.

The CRM indicates that the highest collision risk per year of 1.897 is based on both random (0.488) and regular flight activity from Horseleap Lough (1.409). This would increase the annual mortality of the county population by 0.6%. The EIAR states that flights associated with Horseleap Lough were “predictable, consistent, and generally involved short or circling flights around and over the lough and fields.” As above, I note no nocturnal surveys were carried out, and the CRM has accounted for whooper swans being active for 25% of the night along with daylight hours as per SNH guidance. I note highest input value in the CRM for whooper swan was from VP1, which is located to the northwest of Horseleap Lough and in proximity to T7. All flight activity recorded at VP1 is noted to be during dawn surveys except for one during daylight and one likely during dusk survey[7], and records birds flying across the northern part of the subject site. Increased dusk surveys are noted from VP2, recording flocks of birds flying north or landing, and some recording notes birds still present at roost when survey ended. I note the majority of flight activity

[7] Recorded time not recorded in Appendix 7-5, but corresponding dusk survey for VP1 noted in Appendix 7-1.

recorded away from the roost and adjacent foraging area, appears to be flocks of birds travelling through the subject site either at dusk or dawn. Surveys recorded activity at a number of surrounding waterbodies including Barnaderg Turlough, Carrownabo Turlough, Gorteenlahard Turlough, Levally Lough and Summerville Lough.

Having regard to the above, I consider the evidential basis in relation to Whooper swans, and the demonstration of the wider landscape functionality could have been more fully developed in the submitted material. This evidential limitation identified, however does not materially undermine the assessment presented. I concur with the findings of the EIAR that the Proposed Project will not result in significance habitat loss or disturbance effects on whooper swans. I consider there is the potential given the recorded foraging and flight activity within the subject site and the scope of surveys carried out, for the proposed development to result in significance displacement or barrier or collision risk effects at a local population level. This effect would be moderate and Not Significant.

10.7.7.3. **Habitat Enhancement**

I have reviewed these, and I am satisfied that the proposed enhancement measures as outlined within the BEMP has been designed to avoid an increase in collision risk and I note bird fatality monitoring will take place.

10.7.8. **Conclusion: Direct and Indirect Effects**

Having regard to the examination of environmental information in respect of ornithology in particular the EIAR and technical appendices, I am satisfied that a robust picture of bird activity has been provided. It is considered that construction habitat and disturbance effects, taking account of mitigated measures including best practice construction methodologies, and would not be significant. It is considered that the main significant effects of the development on ornithology are the potential for displacement and collision risk in the operational period.

It is concluded that the efficiency of the specific bird mitigation measures near proposed turbine T1 has not been adequately demonstrated and no other adaptive bird mitigation measures have been identified to address the potential high collision

risk on golden plover, specifically associated with T1 and T6. It is considered that the proposed development would result in a significant displacement and collision risk effect on the wintering golden plover population which is noted to be of national importance. In the event the Commission is minded to grant permission, it is recommended that T1 and T6 are omitted.

I am satisfied that the proposed development would not have unacceptable operational direct and indirect effects on other bird species. It is, however, considered that the removal of proposed turbines T1 and T6 to address significant collision risk effects on golden plover is likely to reduced displacement and/or collision risk effects on other bird species, specifically lapwing, snipe buzzard and whooper swans.

As noted previously, further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

10.8. Land, Soils And Geology

Chapter 8 of the applicant's EIAR deals with land, soils and geology and the following appendices:

- Appendix 8-1 Peat Stability Assessment
- Appendix 8-2 Karst Risk Assessment
- Appendix 8-3 Grid Connection Ground Conditions Assessment
- Appendix 8-4 Bore Hole Investigation Logs

Hydrology and hydrogeology are dealt with in Chapter 9 of the EIAR and the Peat Spoil Management Plan and the CEMP are included in Appendix 4-2 and 4-5, respectively.

This section of the EIA is also informed by the following documents:

- Specialist report, prepared by JD Solutions, Appendix C.

10.8.1. Issues Raised

Risk of collapse of karst features due to construction loadings concerns have been raised regarding to the potential for bog slide or bog burst at the subject site, including in the expert opinion report by Hydro-G (Dr Pamela Bartley) on behalf of Barnaderg Gortberg GWS. Issues are raised regarding the accuracy of the baseline information provided in respect of the depth of peat at the subject site. Observers raise concerns that the proposed development will impact on soil health and quality.

10.8.2. **Context**

- The study area for the Proposed Project extends to 2km.
- Desk study has been carried out along with scoping exercise, walkover survey and site investigations.

10.8.3. **Baseline**

Baseline is set out in Section 8.3 of the EIAR.

- Corine landcover mapping: agricultural pastureland (c. 86%) with peat bogs (c. 11%) and transitional woodland scrub (c. 3%). Mapped subsoils are cutover raised peat and limestone till with small areas of alluvium.
- Mapped landslide susceptibility is low due to the low slope angles encountered.
- Mapped bedrock: Underlain by pure limestone bedrock, which is potentially prone to karstification. Classified as Undifferentiated Viséan Limestone at all turbine locations except T7 which underlain by limestone of the Burren Formation and the sections of the access track between T9 and T7 is underlain by Croghan Limestone formation.
- Peat probes: Encountered peat depths ranging from 0 to 7.1m. Infrastructure located within peat include T2, T3, T5, T9, T7 hardstand, Substation/BESS, northern access tracks and peat repository areas. Areas of peat with a depth of >3m were encountered north of T5, southeast of T7, west of T9, north of T2 and along the floating track between T7 and T9, and areas of >5m were encountered between T5, T7 and T9.

- The Peat Stability Risk Assessment (Appendix 8-1), in the undrained with loading scenario identifies areas with Factor of Safety (FoS) values between 1 and 1.3 (yellow: stable but not safe) and <1 (red: not stable) within the access track between T5 and T6. The remainder of the wind farm layout avoids FoS <1.3 areas. All infrastructure elements are located in areas of negligible risk.

- Boreholes: BH1 and BH2 drilled within mapped Undifferentiated Viséan Limestones geology encountered limestone of similar lithology to the Croghan Limestone formation. Record for GSI borehole dataset east of T7 encountered Croghan Limestone formation. All boreholes encountered dark grey impure argillaceous LIMESTONE with MUDSTONE layers, which is less prone to karstification.
- Trial pits: Encountered competent, unweathered, grey, massive limestone at T2-T5, T8, construction and substation compounds, and weather limestone at T1 and T6. Bedrock not encountered at T7 (GC-TP7) and T9 (TPT7 & TPT9).
- Geophysical survey: Encountered competent, unweathered LIMESTONE bedrock, along the access road to T4, no evidence of underlying bedrock karstification encountered. Karst Hazard Rating of High for the hardstand of T4 and Medium in the vicinity of T1 and T8 with the rest of the subject site rated as Low.
    - Depth to bedrock confirmed at boreholes and trial pits range from 0.8 to 4.9mbgl, and
    - Site investigations did not encounter epikarst layer, karst conduits, significant fractures or clay infilled fractures.
- Karst features: Mapped karst features are located c. 0.5km southeast of T4 with a very high density of mapped karts features c. 2km to the southeast. Field mapping identified 43 no. of karst features within 1km of the subject site. A high density of karst features surrounds T4 (12 features within 250m). Two depression features (K01 and K02) overlap with the proposed access road to T4, and 2D Resistivity survey was carried out

- GCR (public road section): Predominately underlain by limestone tills and bedrock mapped as undifferentiated Viséan Limestone and the Burren Formation. Numerous mapped karst features within 100m of the route.

10.8.4. **Potential Effects**

Table 10.5 Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • Existing peat cutting, forestry plantation and agricultural operations will continue and may expand.
b) <u>Construction:</u> • Land and landuse: Effects on agricultural or forestry land loss due to the small footprint, Not Significant (negative, slight to moderate, direct, likely). No effects on the lands adjoining the proposed development, turf cutting, forestry and agriculture will continue. • Excavation: Granular peat and soil deposits and bedrock all classified as 'Low' importance. Peat and subsoil to be relocated within the subject site, no net loss predicted. Effects considered Not Significant (negative, slight/moderate, direct, likely). • Contamination: Effects on peat soil, subsoils and bedrock from hydrocarbon or chemical leakages and spillages, Not Significant (negative, slight, direct, short-term, unlikely). • Erosion: Erosion of peat, soil and subsoil likely to occur during excavation and landscaping works, Not Significant (negative, slight, direct, short-term, likely). • Peat instability and failure: Identified pathways are vehicle movements and excavation. Infrastructure located in area of negligible risk of peat failure and the proposed development areas have an acceptable margin of safety as per PSRA (Appendix 8-1). Effects considered Not Significant (imperceptible).

• Karst (ground instability): Identified pathways are ground collapse and subsidence. No risk identified for the GCR Majority of wind farm site classed as having low to medium karst risk where Significant karst development unlikely and unstable ground and significant cavities not anticipated. An area of high risk near T04. Effects considered slight to **Significant**.
c) Operation: • Potential for small scale impacts, Not Significant.
d) Decommissioning: • Reduced magnitude of construction effects, Not Significant.
e) Cumulative – Other developments: • Effects on land, soils and geology restricted to the immediate area. Effects from the placement of waste material within a licenced waste facility assessed as part of licensing process. No further cumulative effects predicted as a result of the proposed development.

10.8.5. **Mitigation**

Notable mitigation measures:

- Peat and subsoil removal will be localised to infrastructure location and relocated within the subject site.
- Control measures to reduce the potential risk of peat failure and safety buffers and stockpile restrictions, PSRA Appendix 8-1.
- Detailed design ground investigations to reduce the risk of encountering unexpected karst features, and if required, the use of drilled or grouted piles, rock infill, grouting, and the use of geogrids.
- Surface and subsurface drainage systems.

- Removed vegetive layer to be stored with sod facing the right way up, carrying out reseeding and spreading/planting, placing of brash/bog mats, material to remain on site, and PSMP (Appendix 4-2).
- On-site refuelling measures, training, spill kits, equipment inspection and emergency response plan (incl. CEMP Appendix 4-6). Control building and substation transformers area will be bunded.

In addition, enhancement measures within the BMEP (Appendix 6-4) is noted in the EIAR.

10.8.6. Residual Effects

- Construction: Residual effects land, peat, soil, subsoil and bedrock and ground instability considered long term or permanent, negative, imperceptible to slight, direct, unlikely or likely, and Not Significant.
- Operational: No significant residual effects predicted.

10.8.7. Analysis, Evaluation and Assessment: Direct and Indirect Effects

10.8.7.1. Karst related ground instability

This section considers the geotechnical hazards associated with constructing within a karst environment. The applicant's Karst Risk Assessment is set out in Appendix 8-2 and as clarified by the applicant in Response to Submissions this is an assessment of the geotechnical risk associated with constructing within a karst environment.

The majority of karst related concerns raised by observers relate to hydrogeological pathway and I have considered these in Section 10.9 below. Concerns raised by observers in relation to risk of collapse, site investigation and the Geotechnical Risk Register included in Appendix 8-2 are noted.

I note the assessment of karst related ground instability in Chapter 8 largely summarises the findings of the geotechnical Karst Risk Assessment (Appendix 8-2). I have reviewed the Karst Risk Assessment, and in particular Appendix H Hazard Rating Matrix and Appendix I Geotechnical Risk Register. The Karst Risk

Assessment outlines that “due to the fixed nature of the proposed infrastructure, the most direct risk factor is the potential for karstic features to interact directly with the proposed infrastructure during construction of the Proposed Wind Farm.” Hazards are identified therein and include rapid collapse of doline; subsidence of doline; cavities and voids; variable rock head; and solutional weathered rock. The conclusion of the risk assessment is that the proposed infrastructure has largely avoided karst hazard, and the majority of the proposed infrastructure is located in areas classed as having low karst hazard with medium karst hazard in the vicinity of T1 and T8 and high karst hazard near T4. The EIAR indicates that mitigation measures are only needed for T4, however, I note that the Karst Risk Assessment leaves it open for mitigation measures being required at all proposed infrastructure locations in Section 6 on the account of the risk of encountering a karst feature is not negligible. The potential for mitigation measures being required at all infrastructure locations is also reflected in Appendix I of the risk assessment.

Considering the scope of the site investigations focused predominately on the overburden material, the mapped geology of the subject site, the presence of karst features and the depth to bedrock, I do not consider the potential for undetected karst features can be ruled out. Notwithstanding this, I consider the engineering mitigation measures outlined in Section 6.2 of Appendix 8-2 sufficiently comprehensive to manage the geotechnical karst risk. I note these are also included in Chapter 18 as MM82.

As above, hydrogeological pathway or environmental hazards associated with the karst environment have been considered in Section 10.9 below.

10.8.7.2. Peat related Instability

Concerns have been raised that the risk assessment carried out by the applicant is inadequate. A number of observers have raised concerns relating to peat stability, the risk of peat slide and concerns relating to the construction of floating tracks across deeper peat. Ecological and hydrological concerns associated with the floating track has been address in the relevant sections.

Appendix 8-1 outlines that peat within the subject site comprises uncut raised peat bog which is surrounded by cut-over peat, and that raised bog areas are identified

to be located north of T5, between T7 and T9, and north of T2. Areas of deeper peat within the subject site is noted to coincide with the proposed access roads between T5 and T6 (AL5b and AL5b_Float), between T5 and T8/T9 (AL4 Float), and between T9 and T7 (ALb Float). A peat depth of 6.8m is noted to be recorded along the proposed T9 to T7 access road, a peat depth of 4.6m is recorded adjacent to the T5 and T8/T9 access road, and a peat depth of 5.4m is recorded adjacent to the T5 to T6 access road. The applicant proposes a floating road design for large sections (2.1km) of these access roads, specifically where peat exceeds 1m in depth and states that floating tracks minimise the impact on peat hydrology. The three proposed clear span bridge watercourse crossings of the Dangan Eighter Stream and tributary are noted to coincide with these access roads. Two of these watercourse crossings coincide with sections of floating road design (AL4 Float and AL4b Float) and one watercourse crossing coincides with a section of founded road design (AL5b).

Having reviewed the ground investigation locations (Appendix 8-1, Figure K-1: GI Locations), I note that only peat probing has been carried out along or in proximity to the proposed floating roads. No sampling to determine the characteristics of deeper peat or share vane testing has been carried out. Trial pits (27 no.) were limited to <3m deep peat, and within the northern part of the subject site these were concentrated around turbine locations. Geotechnical laboratory testing was carried out for 15 no. of the trial pits. The 6 no. of hand shear vane testing locations listed in Table 3-2 and mapped on Figure K-1: GI Locations, Appendix 8-1, largely correspond with trial pit locations. Of note, the reference to 10 no. of gouge cores in Chapter 8 is assumed to refer to the hand shear vane testing reported on in Appendix 8-1 as no further information has been provided. No information on subsurface hydrology within the peat has been provided. No groundwater monitoring has been carried out within raised bog settings.

The conclusions of the PSRA are restated in the applicant's Response to Submissions (Appendix 1) which also highlights a conservative approach in terms of additional mitigation measures including identifying Safety Buffer Zones and Peat Stockpile Restriction Areas. The floating track construction methodologies in the Peat and Spoil Management Plan (PSMP, Appendix 4-2) are also noted in the applicant's response. Whilst concerns by observers are noted, I concur with the

applicant that the 'Peat Landslide Hazard and Risk Assessments' guidance by the Scottish Government (2017) as outlined in the response are considered industry best practice guidance. I note concerns by observer that deeper peat exists within the subject site, and accept the applicant's response that probing samples were carried out at appropriate density.

As per the Scottish Government guidance, within raised bog where the slope is of a low gradient and deeper peat occurs, peat landslide is likely to be associated with bog burst. This is also noted in Appendix 8-1 which outlines that bog burst type failures "can occur at very low slope angles and may not be fully quantified by the FoS calculation, as they are driven by hydrological factors rather than slope-driven." Appendix 8-1 further outlines that "site walkovers identified no evidence of significant bog burst features." The Scottish Government guidance highlights the importance of understanding the characteristics of the peat, in particular at proposed infrastructure locations. The guidance highlights that the hydrology within the peat should be recorded and mapped including depth of water strikes encountered during peat probing. The importance of understanding the hydrological zones within the peat is also noted in the Floating Roads on Peat guidance (SNH, 2010). As above, this was not carried out as part of the site investigations for the Proposed Project.

I have considered the result of the undrained condition and undrained condition with the 10 kPa surcharge analysis within Appendix 8-1. The undrained scenario adopts a 5kPa value for the FoS analysis, and this is stated to be a precautionary approach based on HSV test results from trial pits and allowing for a winter scenario given HSV tests were carried out during summer month. Given the share strength values of the deeper areas of raised bog have not been sampled, and these are areas where floating tracks are proposed, I do not consider the precautionary basis for the selecting the 5kPA value to have been sufficiently demonstrated by the applicant. Appendix 8-1 also outlines that a large variation in the level of decomposition and humification was observed throughout the peat body and found that humification levels considered within trail pits generally increased with depth. As above, humification levels have not been tested within the deeper areas of peat, and where infrastructure is proposed. I further note the botanical study (Appendix 6-1) noting increased wetness of peat moving east along the routing of the access track

between T7 and T9. This was also observed during my site visit including areas of surface ponding and quaking within the raised bog.

Both undrained scenarios identified small areas of <1.3 FoS values and these were generally noted to coincide with peat cut faces of banks or ditches/drains including an area adjacent to the access road between T5 and T6. As outlined in Appendix 8-1 these areas are subject to 'Safety Buffer Zones'. The crossing of Dangan Eighter Stream between T5 and T6, given locally deep peat and high slope angles at the banks, is to be founded access track and the banks of the watercourse to be reprofiled. The difficulties in creating adequate transition zones between founded and floated tracks is noted in Appendix 4-2. The second crossing of the Dangan Eighter Stream is not identified as a <1.3 FoS value, however, having reviewed the probing data and visited the subject site, I note this is also in a location of locally deep peat and with high slopes angles at the bank. Of note, Appendix 6-3 noted unsafe access at this location during aquatic survey works (A5). No mitigation measures have been identified for this crossing which as above, is by floating track and clear span bridge. I note the FoS calculation for the access tracks were carried out semi automatically by GIS, and this might explain the variances in results for the two crossing locations. I further note a number of discrepancies and errors in the PSRA Matrix (Appendix N).

Conclusion

Having regard to the above, it is considered that the ground investigations have not established the properties of the deep peat, or an understanding of the characteristics of the deep peat within the subject site. Given lengthy sections of floating road are proposed across areas of deep peat, in my view, the applicant has not sufficiently demonstrated the in situ strength of deep peat can support the proposed floating tracks. Considering this, there is a risk that peat stability associated with construction floating tracks across deep peat has not been fully demonstrated by the FoS values calculated in Appendix 8-1. There are also stability concerns in relation to the northern watercourse crossing of the Dangan Eighter Stream and whether the transition between founded tracks and floating track has been considered in adequate detail within the design process.

10.8.7.3. Impact on Soil Quality

A number of observers have raised concerns regarding impact on soil health and agricultural productivity from wind turbine induced vibrational noise, and specifically in reference to earthworm populations.

I note the applicant's response to submission (Section 2.6.2) which outlines the limited footprint of the proposed development and that the bog and highly improved agricultural landscape habitats within which the proposed turbines are located are not considered highly suitable to earthworms. I note the research paper[8] referenced in observations and having regard to the limited scope of the research paper, I do not concur with observers that this represents peer reviewed scientific evidence or demonstrate that wind turbines are likely to result in significant effects on soil quality or soil biodiversity as a result of vibrational noise. The limitations of the study in regard to understanding patterns observed and sensory mechanism are noted. These align with the limited evidence base available relating to the impact on soil ecology as a result of soil-borne acoustics from human activities, not just wind turbines. Furthermore, I am not aware of any peer reviewed evidence base demonstrating that the presence of wind farm development over the past few decades in Ireland have led to significant effects on agricultural practices as a result of reduced soil biodiversity.

Taking account of the proposed footprint, the soil baseline within the subject site and limited relevant peer reviewed evidence base, I am satisfied that the proposed development will not result in significant effects on soil biodiversity. The applicant's wider biodiversity enhancement measures set out in Appendix 6-4 are noted.

10.8.8. Conclusion: Direct and Indirect Effects

I have considered chapter 8 of the EIAR and all relevant documentation on file. It is concluded that there is insufficient information submitted to conclude on the assessment of peat stability risk associated with areas of deeper peat and the proposed floating tracks.

[8] Velilla, E., E. Collinson, L. Bellato, M. P. Berg, and W. Halfwerk. 2021. "Vibrational noise from wind energy-turbines negatively impacts earthworm abundance", *Oikos* **130**: 844–849

As noted previously, further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

10.9. Water

Chapter 9 of the applicant's EIAR deals with hydrology and hydrogeology and the following appendices:

- Appendix 9-1 Flood Risk Assessment
- Appendix 9-2 Lab Reports
- Appendix 9-3 Groundwater Tabulated Results
- Appendix 9-4 Water Framework Directive Compliance Assessment

Land, soils and geology are dealt with in Chapter 8 of the EIAR and the Peat Spoil Management Plan and the CEMP are included in Appendix 4-2 and 4-5, respectively.

Land, Soil and Geology is addressed in Chapter 8 and include Appendix 8-1 Peat Stability Risk Assessment and Appendix 8-2 Karst Risk Assessment. Biodiversity including aquatic ecology is addressed in Chapter 6. The Peat and Spoil Management Plan is included in Appendix 4-2 and the CEMP is included in Appendix 4-5.

This section of the EIA is also informed by the following documents:

- Specialist report, prepared by JD Solutions, Appendix C.

10.9.1. Issues Raised

Several observers refer to the karst character of the subject site, the potential for karst features underlying the subject site, and the susceptible nature of karst landscapes to contamination. The majority of observations have raised concerns regarding impact on local drinking water supplies, both public and private supplies. The limited scope of the Karst Risk Assessment in terms of hydrogeological is noted in submissions. Expert opinion reports by Hydro-G (Dr Pamela Bartley) on behalf of Barnaderg Gortberg GWS have been received, outlining that no assessment of

groundwater flow system has been carried out, concerns regarding the connection to karst, release of organic matter from bogs, and lack of mitigation measures.

Uisce Éireann notes the location of T1 and T2 within Mid Galway Public Water Supply (PWS) zone of contribution (ZOC), that the depth to bedrock is generally 5m based on site investigations. Uisce Éireann includes conditions for works within the ZOC, request groundwater monitoring is carried out both prior to and during construction and outlines the requirements of the Groundwater Directive 2000/60/EC. Galway County Council and Inland Fisheries have included conditions in their submissions.

10.9.2. **Context**

- Desk study for the subject site and the water study area was carried out. The water study area for assessing the potential zone of impact is the River Clare catchment.
- Field mapping, site walkover assessment and site investigations were carried out.
- Site investigations, groundwater level monitoring and field hydrochemistry measurements, surface water and groundwater sampling and surface water flow measurements informed Chapter 9 of the EIAR.

10.9.3. **Baseline**

Baseline is set out in Section 9.3 of the EIAR. Of note, I have not repeated relevant baseline as summarised above in relation to Chapter 6 and Chapter 8 of the EIAR

- The wind farm site drains to River Clare via Grange River and Abbert River.
- Northern portion of the subject site (T3 to T9) is drained by bog, land drains and 3 unnamed streams which forms Dangan Eighter Stream (EPA Code 30D35). Dangan Eighter Stream flows to Grange River c. 1km downstream. Located within Clare [Galway]_SC040. Proposed new watercourse crossings; 2 no. of the Dangan Eighter Stream and 1 no. of a tributary.
- Southern portion of the subject site (T1, T2, substation, construction compound and site entrance) is mainly drained by Lecarrow 30 (EPA code

30L49) with southwestern part drained by Forty Acres Stream (EPA Code 30F16). Lecarrow Stream flows via Horseleap Lough and enters Abbert River c. 4km downstream after the confluence with Forty Acres Stream. Located within Clare [Galway]_SC050. Proposed new watercourse crossings, 1 no. of the Lecarrow 30 and 1 no. of the Forty Acres Stream.

- The subject site is also drained by a high density of man-made drains located within the cutover bog, grassland, and forestry area.
- TDR accommodation works are located within Clare [Galway]_SC050.
- GCR: Located within Clare [Galway]_SC040 and Clare [Galway]_SC050. Crosses the Grange River, the Forty Acres Stream, the Feagh East Stream (EPA Code 30F17) and a number of tributaries and unnamed streams. There are 9 no. watercourse crossings including Grange River.
- Wind farm site is located within Clare-Corrib Groundwater Body (GWB) (IE_WE_0020), groundwater reported to discharge to Lough Corrib. The GWB is karstic in nature.
- Groundwater levels monitoring at two boreholes (BH1 and BH2) indicated low seasonal variation and limited recharge/vertical groundwater flow.
- Numerous mapped and potential karst features within 1km of the subject site. Potential karst features identified within 250m buffer of turbines and turbines hardstands (T1, T2, T4 T8) and access tracks with the highest density (12) around T4 and access track (AL6). The majority recorded or classified as enclosed depressions/dolines and two potential spring features at the Derrynacrick loughs. Numerous mapped karst features within 100m of the proposed GCR.
- Public water supply: Southern part (50ha) of the subject site is located in the Mid Galway Public Water Supply (PWS) Source Protection Area (SPA). 3.8km of the GCR is located inside the SPA. The Mid-Galway PWS abstraction is from the Lecarrow 30 Stream approximately 2km downstream of Horseleap Lough. The source is largely sustained by numerous karst springs (i.e. overflow springs) located along the banks of Lecarrow 30 Stream downstream of Horseleap Lough.

- Private wells: Nearest dwelling is 720m, assumed that all dwellings in the surrounding lands have a private groundwater well.

10.9.4. **Potential Effects**

Table 10.6: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • Existing peat cutting, forestry plantation and agricultural operations will continue, and surface water drainage will continue to function and may expand.
b) <u>Construction:</u> • Mid Galway PWS and Barnaderg GWS: Effects considered negative, slight, indirect, short term, unlikely, Not Significant. - Considering underlying low permeability Limestone/Mudstone formation, low groundwater recharge and prevailing surface water drainage regime, no effects (quantity and quality) on groundwater conduit/flowpaths towards the PWS/GWS likely to occur during excavations. - Pathways for indirect quality effects via diffuse recharge are extremely limited. Buffers to potential recharge features and these are unlikely to be karstic given underlying geology. - Surface water effects downstream of Horseleap Lough are not likely. - GCR excavation works are shallow and closet karst feature is not a potential point source for recharge. • Tree felling: Potential effects on downstream surface water quality considered indirect, negative, slight, temporary, likely, Not Significant. • Earthworks: Release of suspended solids to surface watercourses, affecting downstream water quality, considered **Significant** (indirect, negative, **Significant**, long-term, likely). TDR (surface water quality): Not Significant.

- Groundwater levels: No groundwater levels impact predicted from the GCR, substation and BESS excavation works. Based on shallow gravity based turbine foundations at all turbine locations, low permeability of the glacial till overburden and small dewatering requirements, groundwater level effects will be temporary and unlikely to be significant beyond 10m, considered Not Significant on local bedrock aquifers and Clare Corrib GWB (direct, negative, slight, brief, likely temporary effect.
- Excavation dewatering (surface water quality): Minor groundwater/surface water seepages will likely occur in turbine base excavations, potential impact on downgradient water bodies considered Not Significant (indirect, negative, moderate, temporary, likely).
- Hydrocarbons (groundwater and surface water quality): Pollution risk from accidental spillage and accumulation of spillage of fuels and lubricants, considered Not Significant (Indirect, negative, slight to moderate, short term, unlikely).
- Wastewater disposal (groundwater and surface water quality): Potential release of effluent from domestic wastewater treatment systems considered Not Significant Groundwater and **Significant** (surface water) (indirect, negative, slight to significant, temporary, unlikely).
- Cement: Potential release of cement-based products, considered Not Significant (indirect, negative, moderate, short term, unlikely).
- Watercourse crossings (morphological and hydrological effects): All new watercourse crossings to be clear span structures and no instream excavation works proposed, considered Not Significant (negative, direct, slight, long term, likely).
- Designated sites (hydrological effects): Lough Corrib SAC located immediately downstream, Considered Not Significant (indirect, negative, moderate, short-term, likely).
- Local groundwater wells (excavation): No potential effects from shallow excavation for GCR, substation and BESS. Given setback and relatively shallow

excavations for turbines (depth of 3-3.5m), underlying geology, recharge characteristics, topography and groundwater flow directions, considered Not Significant (negative, imperceptible, indirect, short-term, unlikely).

- WFD Status: The potential to negatively affect the Clare-Corrib GWB is very low. Potential to negatively affect the WFD status of downstream surface waterbodies and dependent ecosystems is considered indirect, negative, slight, temporary, unlikely.
- Siltbuster (surface water quality): Risk of chemical carryover in post treatment water, considered Not Significant (Negative, slight, indirect, temporary, likely).
- GCR (earthworks and watercourse crossings): Effect on surface water quality considered Not Significant (negative, slight, indirect, temporary, likely).
- Wetland hydrology: Direct loss of intact bog habitat and significant alteration of surface water flushes. Negative, imperceptible to significant (the potential effect varies spatially), direct/ indirect, short to long-term, likely.
- BMEP: Effect considered Not Significant (positive, slight, direct, permanent likely).

c) Operation:

- Low permeability surfaces: A potential increase of approximately 0.41% in the average daily/monthly volume of runoff from the site area (worst-case scenario). Considered Not Significant, (negative, imperceptible, indirect, long-term, likely).
- Suspended solids entrainment: Considered Not Significant (negative, slight, indirect, temporary, likely).
- Mid Galway PWS and Barnaderg GWS: Potential effects on groundwater quality from contaminants, considered Not Significant (indirect, negative, imperceptible, long term, unlikely).

d) Decommissioning:

- Similar impacts to construction phase but of a lesser magnitude, Not Significant.

e) Cumulative:

- Groundwater (quality and quantity): cumulative effects not likely.
- Activities – agricultural/commercial forestry/turbary peat cutting: No significant cumulative effects on downstream surface water quality as result of the proposed development.
- One off Housing: No cumulative effects will occur as a result of the proposed development.
- Other wind farms: Due to the dispersed nature/setback distance of the other wind farms and the implementation of mitigation measures, no potential for significant cumulative effects.

10.9.5. **Mitigation**

Notable mitigation measures:

- Pollution control within the SPA including no storage of fuels, oils, cements or chemicals, refuelling restrictions, no cement washout lagoons and no peat or spoil repositories.
- Best practice mitigation measures to reduce the risk of suspended solids, sediment and nutrient release in surface water runoff. Measures include best practice pre-construction drainage control measures. Drainage control measures including interceptor drains, swales, settlement ponds and treatment trains such as Siltbuster.
- Best practice measures with regard use of oils, fuels and cement based compounds. Use of ready-mixed supply of wet concrete products and where possible, precast concrete. A geotextile liner will be placed below the founding layer (lean mix concrete) where concrete is to be poured.
- Management of excavation inflows and subsequent treatment prior to discharge into the drainage network
- Surface water quality monitoring.

- 50m buffer zone to Lecarrow Stream and all other streams where possible, 10m buffer on drains and watercourse crossings to be clear span. Control measures for near stream construction work including double row silt fences and restricted time period in accordance with Inland Fisheries Ireland guidance. No drainage release within 50m of Lecarrow Stream and within 30m of the enclosed depression/dopline mapped inside the SPA.
- All surface water runoff from upgraded roads and new road surfaces (including hardstands and turbine base areas) will be captured and treated prior to discharge/release.
- All felling operations will conform to current best practice Forest Services regulations, policies, strategic guidance and other guidelines.
- HDD control measures and fracture blow-out (Frac-out) prevention and contingency plan.

10.9.6. **Residual Effects**

- No residual effects on the Mid Galway PWS/Barnaderg GWS.
- No potential to impact on local groundwater wells.
- No significant residual effects on groundwater or surface water quality or quantity, groundwater levels, stream morphology, designated sites, waterbody WFD status. The use of siltbuster systems considered to have a significant positive effect on surface water quality.
- Residual effects on wetland hydrology will range from imperceptible to local direct/indirect **Significant** effects (floating access road between T9 and T7).
- A positive not significant residual effect on site habitat following the implementation of BMEP.

10.9.7. **Analysis, Evaluation and Assessment: Direct and Indirect Effects**

10.9.7.1. **Water Quality**

The majority of submissions raise concerns regarding effects of the proposed development on drinking water quality, as a result of impacts on the Source

Protection Areas of the Barnaderg/Gortbeg Group Water Scheme, the Brierfield and District Group Water Scheme, and the Mid Galway Public Water Scheme. Concerns have been raised regarding the lack of; hydrological modelling and baseline information, long term water quality monitoring; assessment of impacts on private wells; and a remediation strategy, should water quality by compromised. Submissions also query the effectiveness of mitigation measures proposed. Expert opinion reports by Hydro-G (Dr Pamela Bartley) on behalf of Barnaderg Gortberg GWS are noted in relation to lack of groundwater flow assessment and failure to convey the connection between the surface expressions of karst with the know conduit system in the immediate vicinity of the PWS sources and two GWS sources.

I refer here to the report by the specialist consultant, JD Solutions (included in Appendix C) which provides a detailed hydrogeological review of the Proposed Project.

JD solutions outline that the **geology data** related to hydrogeological risks associated with roads/tracks and wider potential pathways is not well defined, and summaries as follows:

> *"In summary, the site derived geological and geotechnical data has focussed on the turbine foundations and ground stability but has not been extrapolated to the wider environment. The distribution of mapped karst features has not been used to inform the deeper geological interpretation. The hydrogeological impact measurement, hazard and risk identification, and impact evaluation are discussed in the hydrogeology section below.*
>
> *While the geological information provides a data set that supports the foundation designs, and in that context it does provide a data set against which geologically controlled receptors can be identified.*
>
> *Within a hydrogeological context, the site investigation does not provide a data set against which an evidenced based hydrogeological conceptual model can be developed, which would allow hazards and risks to be identified and evaluated, with appropriate mitigation and protocols to take account of low risk unknowns or unknowables."*

JD Solutions outlines that the presence of **karst** within the local and reginal setting is fundamental to the EIAR process and summaries as follows:

In summary, the conclusions drawn regarding karst are inconsistent with the evidence; and the recommendations relate only to foundation design and do not take account of the link between karst and hydrogeological (pollution) risks.

The resulting concern is that the assessment dismisses karst as a hydrogeological issue and therefore no protection against contamination entering karst fast flow pathways is offered.

The site investigation does provide a data set against which receptors can be identified, but does not provide a data set against which karst related pathways can be ruled out. As such, affects and impacts related to possible karst pathways cannot be measured. The way in which the karst related data has been interpreted means that it does not appropriately inform a conceptual model which allows hydrogeological hazards, pathways and risks to be identified and evaluated."

In considering **hydrogeology**, JD Solutions summarises as follows:

"In summary, the site investigation concentrates on the shallow soils but it does not present field based data to support a consistent and robust interpretation within a hydrogeological setting at either the Site or local level. In order to identify receptors that may be at risk in a hydrogeological setting, it is necessary to establish the direction of groundwater flow and the interaction with surface water systems. The EIAR does not present the information required to generate groundwater level contours and from those, establish hydraulic gradients and directions of groundwater flow. As such it does not provide a data set against which receptors that may be at risk can be identified or a data set against which affects and impacts can be measured. A hydrogeological conceptual model has not been developed, which allows hazards, pathways and risks to be identified and evaluated."

JD Solutions also notes that that the data collected from peat did not consider hydrogeology characteristics of the peat and the impacts that construction may

have on the peatlands dependent on it. I have considered peat ecology and peat stability in Sections 10.6 and 10.8 above, respectively.

In considering **receptors**, JD Solutions outlines that there are surface water pathways via onsite streams and drainage connecting to the Lough Corrib SAC and there may be groundwater pathways connecting to the Lough Corrib SAC. The construction of proposed turbine concrete foundations will take place within the Carboniferous limestone and the Clare Corrib GWB is noted to be a receptor and a pathway to other receptors. The Mid Galway PWS and Barnaderg GWS are also identified as a principal receptor, although it is noted that the subject site is located largely outside the source protection area. The specialist consultant notes a low risk for the Feigh East and West Group and private wells located more than 100m from the proposed turbines.

In considering **water quantity pathways,** JD Solutions outlines the risk associated with water quantity from groundwater during construction is low and can be adequately management through controlled pumping, monitoring and management. However, it is noted that the EIAR assumes that the limestone groundwater levels will be below the base of the excavations, whilst the water level data presented is high. The report by JD Solutions does not consider the firewater associated with the future BESS, and I have addressed that in a separate section below.

In considering **water quality pathways** to surface water and groundwater receptors, JD Solutions outlines that:

> *"Desk based evidence shows that pathways within the Carboniferous limestone karst system have been proven in the area. Vertical pathways between the surface and the base of foundation excavations within the Site have been assumed to not exist, despite the presence of karst related structures within the Site that have not been verified. Groundwater level data relating to the interaction between the peat, the limestone Till and the Carboniferous limestone have not been presented and therefore the groundwater pathways cannot be understood. An integrated conceptual model including groundwater contours to evidence the local groundwater flow regime in the Carboniferous limestone has not been provided.*

The fact that the Site has the potential for direct pathways to SAC features means that there must be a very high level of confidence in the impact assessment. The risk to the SAC features is associated with pollution entering a fast flow, karst pathway that connects to the groundwater and or an SAC feature.

The likely significant effects analysis, relating to groundwater, is largely based on the conclusion that there is a disconnect between the construction activities and the karst limestone system, that is a pathway does not exist. This is based on only two purpose drilled hydrogeological investigation boreholes. The data presented on karst and the conclusions drawn are in conflict, in that the presence of surface expressions of karst are present on the Site and in the vicinity, but karst pathways are not considered to be present.

The likely significant effects analysis for the earthworks is based on controlling runoff as a result of rainfall. Discharge of runoff will be via a treatment train, and ultimately infiltration back into the peat and/or soil. Direct discharge of runoff to water courses is not proposed. It is proposed that work will be suspended if high rainfall is anticipated by monitoring of weather forecasts, to reduce the levels of suspended solids.

Runoff from the peat and spoil repository areas will be managed by placement outwith a 50m buffer zone of water courses and known surface expressions of karst, and routing of runoff via swales and stilling ponds to the on-site drains.

The design of the hard standings does not prevent infiltration through them into the underlying strata. Neither does the design allow for preventing infiltration or release of contaminated water from settlement ponds."

I note the conclusions of JD Solutions as follows:

"The lack of an evidence based conceptual hydrogeological model means that the connectivity between the Site, the development and local groundwater linked receptors including SAC rivers, public and private wells/boreholes and a sensitive conduit flow karst aquifer cannot be established, and therefore risks associated with impacts from groundwater pollution cannot be assessed.

The risk assessment associated with the construction of the turbine foundations dismisses the risks associated with karst conduit flow in the underlying geology,

based on very little evidence. If groundwater levels are low, then the risk associated with the introduction of cement based products cannot be determined; if groundwater levels are high then the risk associated with basal heave and high dewatering rates cannot be determined. Groundwater levels at the turbine locations have not been established."

Conclusion

Having regard to the above, it is considered that insufficient information has been submitted to rule out groundwater pathways between subject site, the Proposed Project and sensitive groundwater receptors including Lough Corrib SAC and water supplies, and as such, the assessment of significance water quality effect as a result of the Proposed Project presented in the EIAR cannot be substantiated.

It also considered that construction surface water management mitigation measures in the EIAR have not accounted for groundwater related risks, and have not been quantitatively design and as such, significance of residual effects cannot be concluded.

10.9.7.2. **Water Framework Directive**

The northern portion of the subject site is located within the Grange (Galway)_010 WFD river sub basin. This is noted to have achieved 'Good status' in the 2nd and the 3rd cycle and is 'Not at Risk' of failing to meet its WFD objectives. Lough Corrib SAC is located within the Grange (Galway)_010 WFD river sub basin, c. 3.5km downstream of the subject site. The southern portion of the subject site is located within Abbert_030 WFD river sub basin. This is also noted to have achieved 'Good status' in the 2nd and the 3rd cycle and is 'Not at Risk' of failing to meet its WFD objectives. Lough Corrib SAC is located within the Abbert_030 WFD river sub basin, c. 5.5km downstream of the subject site. The Subject site is located within the Clare-Corrib groundwater body (GWB) (IE_WE_G_0020) and the status is 'Good' and 'not at risk'.

Downstream of the subject site the Corrib_010 and Corrib_020 are mapped as designated Salmoind Waters. Corrib Lower Lake (IE_WE_30_666a) and the Corrib_020 SWB (IE_WE_30C020600), downstream of the subject site are identified as Drinking Water Protected Areas (DWPAs). The southern part of the

subject site including T1, T2 and the temporary construction compound overlap with the Mid Galway Public Water Supply (PWS) Source Protection Area/Zone (SPA/Z) and Barnaderg GWS.

Having regard to the 'Good' status of the river sub basins and the GWB overlapping the subject site and the sensitivity of the downstream water environment, Lough Corrib SAC, and the conclusion in the previous section with regard surface water and groundwater quality risk associated with the Proposed Project, I am not satisfied that it has been adequately demonstrated that the proposed development will not cause a deterioration in water quality or will ensure that the sensitive receptors in the catchment of the proposed development do not suffer any deterioration in water quality or will impede the objective of achieving 'good' status of any surface water or ground water body. My conclusions in Section 10.6 and 10.8 on the peat ecology and peat stability and associated impact on peat hydrogeology should also be noted.

The proposed development would therefore be contrary to the requirements of Article 4 of the EU Water Framework Directive (2000/60/EC), as transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003), as amended, and would be inconsistent with the objectives of the Water Action Plan 2024 and the proper planning and sustainable development of the area.

10.9.7.3. **Flood risk**

Observers have raised concerns regarding flood risk.

As per the Flood Risk Assessment (Appendix 9-1) the subject site is located within a mapped fluvial flood zone and is as such, considered in a low risk (Flood Zone C). A low risk of significant pluvial flooding has been identified given the presence of extensive manmade drainage networks. The FRA has determined that the flooding is unlikely to be problematic within the subject site. It is noted that the existing drainage regime will not change significantly and that the proposed drainage system will be fully integrated into the existing bog, forestry and agricultural drainage systems. The EIAR confirms that settlement ponds will be designed to discharge to greenfield rates and concludes that the risk of the Proposed Project contributing to

downstream flooding is considered imperceptible. I further note the conclusion by JD solutions that: “An appropriate flood risk assessment has been undertaken, which demonstrates the low risk of flooding both on and from the development.”

10.9.7.4. **BESS**

A number of submissions have raised concerns regarding the risk of BESS fire and firewater contamination. The applicant’s Reponses to Submissions restates the risk of fire or explosion within the context of major accidents and natural disaster as per Chapter 16 of the EIAR. The response does not address fire risk associated with the BESS.

The potential for contamination of water associated with a BESS fire has not been assessed in the EIAR. A Fire Risk Management Emergency Response Plan has not been submitted.

I note the preferred suppression agent for BESS fires such as lithium-ion battery fire, is water and that large quantities of water will be required. The provision of water storage tanks, their capacity and a likely source e.g. abstraction of the water have not been addressed in the EIAR. A BESS fire is likely to result in significant water contamination, picking up toxic and corrosive products including hydrofluoric acid, heavy metals, electrolytes, plastics, etc. The firewater retention design has not been considered in the EIAR.

The Commission will note that the BESS forms part of the future development proposal, however the cumulative effects have not been assessed in considering the Proposed Project.

10.9.7.5. **Microplastic pollution**

Whilst observers concerns regarding Bisphenol A (BPA) and microplastic pollution from the erosion of wind turbines are noted, I am not aware of any peer reviewed scientific evidence base quantifying the release of BPA or microplastic from the erosion of wind turbines or demonstrating any emissions likely to result in a significant effect on the environment. The routine preventative maintenance programme of the turbines is noted.

10.9.8. **Conclusion: Direct and Indirect Effects**

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observations received in relation to the application. It is concluded that there is insufficient information submitted to rule out groundwater pathways between subject site, the Proposed Project and sensitive groundwater receptors including Lough Corrib SAC and water supplies, and as such, the assessment of significance water quality effect as a result of the Proposed Project cannot be substantiated.

On this basis, it has not been demonstrated that the Proposed Project would not give rise to the deterioration in the ecological and/or chemical status of the groundwater and surface waterbodies contrary to the requirements of Article 4 of the Water Framework Directive and that the proposal would not adversely affect the integrity of the European Sites.

As noted previously, further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

10.10. **Air Quality**

Chapter 10 of the applicant's EIAR deals with air quality.

Observers raise concerns that the EIAR presents zero measured data and zero modelling, so its conclusions are unfounded and non-compliant, and that schools lie directly on the haul route. I have addressed the likely increase in vehicle trip generations during construction phase in Section 10.15 below, and I have not repeated it herein.

I have examined **Chapter 10** of the EIAR which deals with this topic. The air quality in the vicinity of the Proposed Project is considered to be typical of a rural area.

Exhaust emissions will arise from the operation of construction vehicles and from the operation of construction plant and machinery, and these will be temporary for the construction phase. The excavation, tree felling, demolition, removal of topsoil and the movement of materials will give rise to dust emissions. Sensitive properties in relation to **dust** deposition band have been identified in Figure 10-2 and Figure

10-3. The overall sensitivity of the area to dust soiling effects during the construction process of the prosed development is considered to be Low, increasing too High for the grid connection works due to the number of sensitive receptors within 20m of the GCR. The overall sensitivity of the area to human health effects of PM10 during the construction process is considered to be Low.

Incorporating best practice mitigation measures to reduce the effects of exhaust and dust emissions as outlined in sections 10.3.2.1 and 10.3.2.1.2 and incorporated in the CEMP (Appendix 4-5), a short term or temporary, not significant to slight negative residual effect is predicted on air quality during the construction phase of the Proposed Project. Similar effects, but less impact are predicted during decommissioning and there is limited potential for exhaust and dust emissions to arise during the operational phase. During the operational phase, a long term significant positive effect on air quality as a result of the Proposed Project from the increased provision of electricity from renewable energy sources is predicted, and a long term moderate positive cumulative effect.

10.10.1.1. Conclusion: Direct and Indirect Effects

Having regard to the above, I am satisfied that there is no potential for any significant residual direct, indirect or cumulative construction (and decommissioning) effects on air quality as a result of the Proposed Project. I have addressed the effects from dust on sensitive ecological receptors including Annex 1 Habitat – Active Raised Bog [7110] in Section 10.6 above. Taking account of the EPA Guidelines impact classification referenced in Chapter 10, I consider the potential effect on air quality will be long term moderate and positive as a result of the Proposed Project, increasing to significant and cumulative within the context of increased provision of electricity from renewable energy sources.

10.11. Climate

Chapter 11 of the applicant's EIAR deals with climate.

Observations have raised concerns that the EIAR incorrectly assumes that energy produced by the proposed development will directly replace energy produced from

fossil fuels. Concerns raised regarding source material for turbine masts are addressed in Section 10.3 above.

I have examined Chapter 11 of the EIAR which deals with Climate and Appendix 11-1 Climate Legislation and Policy and Appendix 11-2 Carbon Calculations. The design of the Proposed Project considers climate change and resilience to same and references assessment on the vulnerability of the Proposed Project to major accidents and natural disasters is detailed in Chapter 16 Major Accidents and Natural Disasters.

The **Carbon Calculations** are presented in Appendix 11-2, and I note these include for an expected removal of 97,944m^3 volume of peat and for a loss of 11.25ha of forestry as well as other identified main CO_2 carbon losses. I note these do not include the substation compound area or potential sinking of floating roads or areas affected by drainage of floating roads. However, I do not consider it likely that these additions to the calculations of affected peat would substantially alter the below CO_2 losses due to the removal of peat given these are noted to be precautionary. In this regard, I note the estimated total excavated peat and spoil volumes in EIAR Chapter 8, Table 8-15 are noted to be 39,530m^3 and 75,300m^3, respectively. Excavated peat are to be managed in peat deposition areas (4 no.) with a total volume capacity of 44,380m^3 with details provided in Appendix 4-2 Peat and Spoil Management Plan. Peat is not proposed to be removed from site.

The main **CO_2 losses** are summarised in Table 11-5 and the Proposed Project is expected to give rise to 145,705 tonnes of CO_2 equivalent losses, or a maximum 224,539 tonnes. Of these, 38% of losses are from the proposed turbines Wind Farm and 28% due to back up. The CO_2 losses from the removal of peat and drained peat equates to an expected 12% or 17,555 tonnes (maximum losses are 94, 267 tonnes) and tree felling and carbon fixing potential accounts for 3.4% and 1.1% of losses, respectively. The remaining losses are from embodied carbon in construction, materials (17.6%) and construction phase transport (0.2%). I note that

The **carbon savings** calculations apply a 35% load factor based SEAI's Enduring Connection Policy 2.3 (2024) and a carbon load figure of 204.3 gCO2/kWh sourced from SEAI. A rated output of 7MW per turbine, total estimated output of 63MW, is used in the EIAR to calculate the anticipated power output. Based on this, the

proposed development will displace approximately 39,462 tonnes of carbon dioxide per annum (1,381,176 tonnes over 35 years). The carbon estimated losses equates to 11% of the total amount of carbon dioxide emission that will be offset by the operation of the proposed development. The estimated payback time to offset the 145,705 tonnes of CO_2 losses is 3.6 years (44 months) of operation. The applicant further notes that measures to offset the loss of carbon fixing vegetation include the replanting condition of the felling licence and planting measures set out in the Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4). Having regard to procedures and measures described in the CEMP (Appendix 4-5) on waste management, the predicted effects on climate during construction (decommissioning) are permanent imperceptible negative and cumulative. A long term significant positive effect on climate during operation is predicted and a long term moderate positive cumulative effect is predicted in Chapter 11.

In regard to **fluorinated greenhouse gases** including SP_6, I note EU Regulation 2024/573 (F-gas Regulation) came into effect 11th March 2024. Article 13, Part 9 of EU Regulation 2024/573 (F-gas Regulation) and is phasing out the use of F-gas in electrical switchgear in primary and secondary distribution, both publicly and privately owned and include prohibition dates (FAQ on switchgear as regulated by the F-gas Regulation (EU) 2024/573, Version 3, 19/11/2025). In relation to the proposed development, the F-gas Regulations are applicable to switchgear used in the substation and wind turbines. In the event, Gas Insulated Switchgear (GIS) equipment is being used then Article 4(10) and 4(3) set out obligations to prevent emissions of F-gas and operator and manufacturers “shall take all measures that are technically and economically feasible to minimise leakage of the gases.” In response to the F-gas Regulations, ESB has confirmed that it will not be in a position to commission or connect contestably built switchgear which does not comply with the legislation. Taking account of the requirements of the F-gas Regulations, standard operational requirements of GIS equipment and the lengthy pre-construction timescales associated with wind farm developments, I am satisfised that potential negative effects on climate from electrical switchgear equipment can be avoided and mitigated and would be not significant.

10.11.1.1. **Conclusion: Direct and Indirect Effects**

As part of its functions the Commission must, in so far as practicable, perform its functions in a manner that is consistent with a) the most recent approved climate action plan, b) most recent approved national long term climate action strategy, c) national adaptation framework, sectoral plans, d) furtherance of the national climate objective and e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State[9]. The long term positive effect from the carbon savings will support the objectives of these plans and the national transition towards a low carbon, climate resilient and sustainable nation.

Considering the above, I am satisfied that potential negative effects on climate would be avoided, managed and mitigated. The greenhouses gas emissions as a result of the Proposed Project will be offset by the operation of the proposed development. I consider there will be a long term moderate positive residual effect on climate as a result of the Proposed Project, and a potential **significant** cumulative positive effect, due to the displacement of CO_2 from the atmosphere arising from fossil fuel energy production.

10.12. Noise and Vibration

Chapter 12 of the EIAR contains the assessment of Noise & Vibration. This chapter is accompanied by the following appendices:

- Appendix 12-1 Construction Noise Report
- Appendix 12-2 Operational Noise Report
- Appendix 12-3 Battery Energy Storage System (BESS) Noise Report

An assessment of Population & Human Health is provided in Chapter 5 of the EIAR, and in Section 9.6 of this report.

10.12.1. Issues Raised

The observers raise a number of noise concerns relating to noise limits, amplitude modulation, low frequency noise, infrasound, tonal noise, and noise nuisance. Observers raise concerns regarding the omission of sensitive receptors from the

[9] Section 15 (1) of the Climate Action and Low Carbon Development Act 2015 (as amended)

noise assessments and the use of outdated noise thresholds and guidance. The Expert Opinion by Huson and Associates attached to Barnaderg Cooloo Windfarm Action Collective CLG submission relates to a different wind farm scheme (Ballynisky Wind Farm) and as such, is not considered relevant to the Proposed Project.

The issue of noise nuisance is also raised by the National Office for Environmental Health Services (NEHS), who note that compliance with noise thresholds and planning conditions may not be sufficient to prevent noise nuisance. The NEHS submission also refers to the need to implement the noise thresholds in the World Health Organization's Environmental Noise Guidelines for the European Region (2018).

Observers raise concerns in respect of potential health impacts arising from noise. I have assessed noise and human health impacts in Section 10.5 of this report, and I have not repeated the assessment herein.

I have addressed the matter of sensitive receptors and setback to same in Section 9.4 above and not repeated it herein.

10.12.2. **Context**

Noise and vibration criteria and assessment methodology is presented in the following sections of Chapter 12:

- Construction (decommissioning) phase: Sections 12.4.1.1 to 12.4.1.2
- Operational phase: Sections 12.4.1.3 to 12.4.1.6.
- The following wind turbine noise limits are proposed at nearby sensitive receptors for the operational phase in Section 13.4.1.3:
    - Daytime (07:00 – 23:00hrs):
    - 40 dB(A) where background noise levels are below 30dB; and.
    - 45dB(A) or background noise plus 5dB, whichever is the greater, where background noise levels are greater than 30dB.
- Night-time (23:00 – 07:00hrs):
- 43 dB(A) or background noise plus 5 dB, whichever is the greater.

Vestas V162 7.2 with serrated trailing edge blades and 99 m hub chosen as candidate turbine, providing the most precautionary approach. Appendix 12-2 includes modelling for additional candidate turbines: Vestas V150 6.0 MW with serrated trailing edge blades and 105 m hub; GE 5.3-158 5.3 MW with normal blades and 101 m hub; and, the Siemens Gamesa SG 155 6.6 MW with normal blades and 102.5 m hub.

10.12.3. Baseline

The baseline environment in respect of noise and vibration is set out in Sections 12.4.4 and 12.5 of the EIAR.

A total of 439 no. Noise Sensitive Receptors (NSR) were identified within 2.5 km of the proposed wind turbines. These NSR were represented by 7 no. Noise Monitoring locations (NML). 13 NSRs were chosen as Construction Noise Assessment Locations (CNALs), 10 NSRs were chosen as Noise Assessment Locations (NALs) and 7 NSRs were chosen as BESS Noise Assessment Locations (BNALs). No participating or involved properties have been identified. Appendix 12.2 lists all NSRs and the corresponding NML.

Background noise monitoring was undertaken from 7th October 2022 to 31st December 2022 for NMLs 1 to 6, inclusive, whilst NML7 noise monitoring continued until 5th January 2023. Simultaneous wind speed/direction data were recorded at various heights using a meteorological mast.

Tables 12-10 and 12-11 of the EIAR give a summary of prevailing background noise levels. The existing background noise in the vicinity of the subject site is generally considered ‘Low’, with noise being below 30dB at low wind speeds. Typical sound sources recorded being those associated wind passing through vegetation and around building, birdsong, and occasional cars on local road.

10.12.4. Potential Effects

Table 10.7: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects

a) Do Nothing:

- Not stated.

b) Construction:

Noise: Potential exceedance of thresholds in certain construction scenarios.

- Predicted construction noise levels are below the 65 dB (A) threshold at all CNALs under all the scenarios tested.
- Below 55dB(A) evening and weekend threshold at all CNALs except at CNAL 11 and 12 under Scenario 1, limited duration exceedance during TDR accommodation and site entrance works.
- Night time considered for Scenario 7 in case of generator usage at night, for infrastructure such as welfare facilities and lighting only, comfortably below 45 dBA threshold.
- Cable trenching: Noise would be in the region of 75-80 dB(A) within 20 metres of activity, and the area of construction would move along the route at circa 150 to 300 metres per day.
- HDD: Potential **significant** impacts at 1 no. water course location, where the dwelling is within 40 metres of the crossing location.

Vibration: Owing to the separation distances between the construction areas and the closest receptors, Not Significant.

c) Operation:

- Wind turbines (cumulative): Predicted likely cumulative noise levels (all schemes) meet the 2006 Guideline Noise Limits at all NALs. Not Significant.
- Wind turbines (Site Specific Noise limits): SSNLs derived from considering the proportion of the total 2006 Guidelines noise limit already allocated, or could theoretically be used by other wind farms in proximity. The proposed development meets the SSNLs all NALs when operating on its own. Not Significant.

• Not possible to predict if OAM will occur at the NALs. • No significant cumulative BESS operational noise is anticipated.
d) Decommissioning: • Anticipated to be similar to, but less than those arising from the construction phase.
e) Cumulative: • Other developments: No cumulative construction noise effects anticipated. Predicted noise levels are more than 10 dB below threshold values at all CNALs except CNAL 11, 12 and 13 where levels are within 10dB in short durations. Operational cumulative assessment as above, Not Significant.

10.12.5. **Mitigation**

Notable measures include the following:

- Good practice during construction to reduce and control noise detailed in the CEMP (Appendix 4-3).
- Good onsite practices as per Section 8 of BS 5228-1:2009+A1:2014.
- Construction will not occur close to residential dwellings outside the BS 5228 daytime hours (Mon-Fri 07:00 to 19:00 and Saturday 07:00 to 13:00).
- Appointment of community liaison officer.
- Commitment to investigating noise complaints, inclusive of any complaint which may relate to OAM (i.e. beyond overall noise levels found in planning conditions).
- The design of the BESS includes a 4 m tall acoustic fence around its northwest perimeter.

10.12.6. **Residual Effects**

- No significant residual construction (decommissioning) noise and vibration effects as a result of the proposed development, or cumulatively, are predicted.
- No significant residual operational noise effects including cumulative or as a result of turbine selection within the proposed range are predicted, noise predictions lie below 2006 Guideline limits. Taking account of mitigation measures to reduced OAM, if and when it occurs, no significant residual effects predicted.
- No significant residual effects from operational BESS noise.

10.12.7. Analysis, Evaluation and Assessment: Direct and Indirect Effects

10.12.7.1. Construction Noise

Observers have raised concerns regarding impacts from construction noise. The construction noise assessment in Chapter 12 and Appendix 12-1 modelled a number of construction scenarios at each of the 13 Construction Noise Assessment Locations (CNALs), and I consider the assessment of construction noise as a result of the Proposed Project to be comprehensive. I have summarised the results of these above, and I am satisfied that predicted construction noise levels are below applicable BS 5228 thresholds and that the exceptions where exceedance of these thresholds are predicted have been mitigated for. I further note the commitment to appoint a Community Liaison Officer as detailed in Section 12.7.2 of the EIAR.

10.12.7.2. Wind Turbines Noise Limits Standards and Guidance

A number of observers raise concerns regarding noise limits and that the applicant's assessment relies on the outdated 2006 Guidelines and ETSU-style noise standards, and that the proposed development should be evaluated against the 45dB Lden Limit of the Who Guidelines, Environmental Noise Guidelines for the European Region 2018 or the British Noise Standard BS 4142:2014+A1:2019. The NHSE has commented on the 2006 Guidelines noise limits and the outlined that the WHO 2018 guidance should be considered.

Noise nuisance, specifically in reference to Irish High Court Cases have been raised in a number of observations and in the submission by the NHSE. Whilst concerns are noted, I consider private nuisance matters to be outside the scope of the planning application. The matter being considered is the application of noise limits, standards and guidance and the adherence of the proposed development to same which I have addressed in the following sections.

Planning guidance for wind turbine noise assessment in Ireland and the approach for setting noise limits at receptors is in the 2006 Guidelines. These are understood to have been largely based on ETSU-R-97 (DoTI, 1996), a now superseded UK guidance document[10]. As previously noted, the 2006 Guidelines remain in force in Ireland and there are no confirmed timelines for the publication of revised guidelines. In terms of the Draft 2019 Guidelines, the Commission will note that the approach to wind turbine noise assessment in the draft guidelines are one of the key aspects being reviewed and that this matter has been noted by the applicant.

The 2026 UK Government guidelines 'Assessment and Rating of Wind Turbines Noise' (hereafter referred to as the ARWTN Guidance) which replaced ETSU-R-97, states that it "provides technical guidance for assessing and controlling operational noise from wind turbines in the planning context." The 'Report for UK Government: A review of Noise Guidance for Onshore Wind Turbines' (WSP, 2023), hereafter referred to as the WSP scoping review, is noted to provide an extensive technical research evidence base underpinning the ARWTN Guidance (2026). Whilst the ARWTN Guidance (2026) is not applicable to Ireland, I have taken note of this and the WSP scoping review (2023) herein, given the latter is noted to provide comprehensive and recognised review of the wind turbine noise assessment and rating.

Of note, the publication of the ARWTN Guidance (2026) did not supersede the Institute of Acoustics, 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (IoA, 2013). The ARWTN Guidance (2026) confirms that the methodology for prediction of wind turbine noise

[10] ETSU-R-97 was superseded by The Department for Energy Security and Net Zero publication 'Assessment and Rating of Wind Turbine Noise' (19th June, 2026); https://www.gov.uk/government/publications/assessment-and-rating-of-noise-from-wind-turbines-guidance

and best practice are set out in 2013 GPG. Whilst the 2006 Guidelines predates the 2013 GPG, I note the 2013 GPG is recognised as a best practice tool to inform wind turbine assessment in Ireland and has informed the assessment in Chapter 12 of the EIAR and that these are referenced in the Draft 2019 Guidelines.

Submissions by observers and the NEHS refer to the WHO Guidelines 'Environmental Noise Guidelines for the European Region' (2018). Chapter 12 of the EIAR and the applicant's Response to Submissions consider the applicability of the WHO Guidelines (2018). Outlining that the WHO Guidelines (2018) make recommendations using noise indicator L_{den} and are as such, not appropriate criteria for the assessment of wind turbine noise and do not provide an assessment methodology. L_{den} is an annual averaged index parameter commonly used for transport noise that allows for direct comparison of data from studies employing differing methods. I note the WHO Guidelines (2018) acknowledge the limitations in terms of wind turbine noise, outlining that L_{den} offer "a poor characterization of wind turbine noise." The WSP scoping review (2023) finds that the WHO Guidelines (2018) "have limited relevance and are not considered to offer a robust platform for developing a framework of wind turbine noise effects thresholds" and recommends that these "should not be used as a basis for developing a framework of effects thresholds for wind turbine sound." The conversion informing noise limits within the Draft 2019 Guidelines, and which is subject to review, is noted to have been underpinned by the WHO Guidelines (2018).

Submissions by observers have suggested the application of the British Noise Standard BS 4142:2014+A1:2019 for the assessment of operational wind turbine noise. I concur with the applicant who, in their response to submissions, outlines that BS 4142:2014+A1:2019 is not suitable for assessing wind farm noise. I further note BS 4142 is an impact-based approach which does not correspond with the limit-based approach to wind turbine noise assessment.

Having regard to the above, I am satisfied that the 2006 Guidelines remain in force and that the limitations and inconsistencies of the Draft 2019 Guidelines, specifically in relation to noise are well understood and I concur with the applicant that compliance with the Draft 2019 Guidelines noise limits would not be applicable. Furthermore, I am satisfied that the applicant's noise assessment in Chapter 12 of

the EIAR has been carried out against noise level limits derived from the 2006 Guidelines in conjunction with guidance, considered relevant at the time of the assessment, ETSU-R-97 and GPG (2013). I am satisfied that the publication of the 2026 UK Government guidelines does not alter this assessment.

In reaching the above conclusion, I have also had regard to CDP Policy Objective RE3, DM Standard 69 and LARES Policy Objective 14 as listed in Section 7.3 above.

10.12.7.3. **Wind Turbines Operational Noise**

Observers raise concerns regarding the level of noise that would arise from the proposed wind turbine once operational, and the impacts of excessive noise on daily life and reference is made to instances where families have had to leave their homes because of the noise arising from nearby wind turbines. Concerns have been raised by observers in respect of the noise modelling on the basis that noise was not modelled for early morning or late evening.

As above, existing planning guidance for operational wind turbine noise is set out in the 2006 Guidelines and this should be had regard to. The noise limits within the Draft 2019 Guidelines which were derived from the WHO Guidelines (2018) are addressed in the previous section. Noise assessment criteria within the recently published ARWTN Guidance (2026) are not applicable to this jurisdiction.

For daytime, the lower fixed limit within the 2006 Guidelines is 45dB or background plus 5dB, whichever is the greatest, except in a low background noise environment where a fixed minimum limit in the range 35-40 dB is recommended. The applicant has adopted a noise limit of 40 dB(A) where background noise levels are below 30 dB; and a limit of 45 dB(A) or background noise plus 5 dB, whichever is the greater, where background noise levels are greater than 30. I note no financially involved properties have been identified in the assessment.

For nighttime, the 2006 Guidelines set a fixed limit of 43dB(A). The applicant has adopted this approach with the addition of a background plus 5dB(A), whichever is the greater parameter, and the applicant outlines that this approach aligns with planning conditions. I do not necessarily dispute the applicant's statement that

some wind farm schemes may have been permitted with a greater nighttime noise limit than 43dB(A), however as set out above, the 2006 Guidelines are applicable.

Based on the above, Table 12-13 of the EIAR presents daytime and nighttime 'total noise limits' for Noise Assessment Location (NAL)1 to NAL10. Chapter 12 confirms that both day and night time noise limits are derived from background noise data measured during so-called 'quiet periods of the day', comprising all evenings from 18:00 to 23:00, plus Saturdays from 13:00 to 18:00 and Sundays from 07:00 to 18:00. I considered this approach to be in accordance with current best practice. Background noise levels are presented in Tables 12-10 and 12-11 of the EIAR.

The operational noise assessed incorporates a cumulative assessment (Table 12-15 and 12-16) and a site specific noise assessment (Table 12-17 and 12-18). The cumulative assessment is noted to include the proposed development in combination with the operational Cloonlusk Wind Farm and proposed Clonberne Wind farm (Appendix 12-2). The likely noise predictions from the two other schemes were found to be more than 10 dB below the 'total noise limits' in Table 12-13. The assessment, therefore, allocated the 'total noise limits' to the proposed development in accordance with GPG e.g. the 'site specific noise limits' matches the 'total Noise limits'.

The noise assessment undertaken at the NALs predicts that the proposed development can operate cumulatively with the operational Cloonlusk Wind Farm and proposed Clonberne Wind farm and meet the 2006 Guidelines noise limits for both daytime and nighttime. No exceedances of the fixed 43 dB nighttime noise limits of the 2006 Guidelines are predicted at any of the NALs. I note the influence of cumulative wind farms on the predicted operational noise is limited, generally within 0.1 dB (Table 12-15 and 12-16). I further note for all the NALs and at the various wind speeds the predicted wind turbine noise levels are comfortably below the noise limits.

Noise predictions are noted to apply the Vesta V162 7.2 MW turbine as a precautionary scenario, as this is noted to be the loudest turbine at the key wind speed range. Appendix 12-2 also models three other candidate turbines and these show similar predictions.

In Section 9.4 above, I confirm that all additional identified sensitive receptors except one is located in close proximity to sensitive receptors already identified in the EIAR. This additional sensitive receptor is an existing occupied dwelling within 510m of proposed T5 and it is noted to be located within the 45dB contour plot shown on Figure 12-4 of the EIAR. The 45dB contour overlapping this sensitive receptor appears to be mainly attributed to T5 or potentially in combination with T4. The 45dB contour line exceeds the fix 2006 Guidelines night time limits and the day time limits, at the majority of wind speeds, as applicable to the closets NAL (NAL4). I note wind turbine mode management and curtailment are proposed as part of the amplitude modulation and I am satisfied that such measures could also control noise limits at this receptor. The extent of operational curtailment required for the proposed wind farm to meet noise limits at this sensitive receptor is not known at this stage as this has not been modelling in the EIAR. It is possible, subject to modelling, that a curtailment strategy could require the omission of turbine(s) and/or could substantially reduce the energy yield of the proposed development.

Having regard to the above, the applicant has satisfactorily demonstrated that the proposed development can operate cumulatively within the daytime and nighttime noise limits of the 2006 Guidelines at the location of sensitive noise receptors except for the additional sensitive receptor located 510m from T5 which was omitted from the EIAR. The proposed development is, therefore, likely to result in a significant adverse effect on this noise sensitive receptor.

In the event the Commission is mined to grant permission, modelling and mitigation strategy to ensure noise limits compliance all existing and permitted noise sensitive receptors should be conditioned.

10.12.7.4. **Infrasound and Low Frequency Noise**

Observations have raised concerns regarding impacts from low frequency and infrasound noise, and state that low frequency noise was not sufficiently assessed in the EIAR.

I note Appendix 12-2 of the EIAR includes comprehensive overview of relevant research in respect of infrasound and low frequency noise. It concludes that it is not necessary to carry out specific assessments of such noise characteristics within the

noise assessment. Chapter 12 further notes that there is no evidence that LFN has adverse impact on health of wind farm neighbours and was therefore scoped out of the assessment. The applicant partly reiterates this research in the Response to Submissions (Appendix 3) stating that "levels of LFN and infrasound have been found to be particularly low from wind turbines, and this is backed up by a large body of work." The applicant's response concludes that no adverse health effects are anticipated.

Infrasound: The applicant outlines that infrasound refers to sound at frequencies below 20 Hz, and as per the WSP scoping review (2023) is often related to the blade passage frequency for wind turbines. Appendix 12-2 notes that infrasound from wind turbines is at levels below noise generated by wind moving around buildings or other obstacles. The 2006 Guidelines does not reference infrasound and the Draft 2019 Guidelines states that there is no evidence that wind turbines generate perceptible infrasound. The WSP scoping review (2023) outlines that research has shown that the level of infrasound generated by modern upwind rotor designed turbines at typical receptor distances are well below the threshold of perception. The WSP scoping review (2023) concluded that the findings of existing evidence base is that "wind turbine infrasound at exposure levels typical for dwellings has no adverse effects on health and reported symptoms are more likely to be psychogenic in origin." The recently published UK Guidance (2026), following on from the research carried out in the WSP scoping review (2023), confirms that infrasound does not requiring assessment.

Low Frequency Noise: Appendix 12-2 outlines that low frequency noise (LNF) refers to sound occurring in range of 20-200 Hz. It is noted that low frequency sounds need to have a high level of amplitude before they are audible and that LFN produced by wind turbines often goes unnoticed. The 2006 Guidelines does not reference low frequency noise. The Draft 2019 Guidelines states that low frequency noise must be quite loud in order to be audible and that there is normally no excessive low frequency element in the noise from a wind turbine. The more recent WSP scoping review (2023) concluded that the findings of existing evidence base is "that controls on A-weighted wind turbine sound levels are expected to be sufficient to control the effects of low frequency noise." The UK Guidance (2026), following on from the research carried out in the WSP scoping review (2023), confirms that low

frequency noise does not require assessment and that sensitive receptors are suitably protected from low frequency sound by the A-weighted level control measures.

Having regard to the above, I am satisfied that infrasound and low frequency noise is adequately considered within the EIAR, that the approach take reflects the latest relevant research and best practice, and that a planning condition to control noise limits cover all operational noise generated from the proposed wind turbines.

10.12.7.5. **Vibration**

Observers raise concerns regarding the impacts of vibration arising from the proposed development. Appendix 12-2 references previous testing carried out in Scotland which found that the levels of ground borne vibrations from wind turbines were so small that there is no possibility of humans sensing the vibration and absolutely no risk to human health (Keele University, 2005). The applicant's Response to Submissions (Appendix 3) states that there will be no perceptible ground borne vibration at residential receptor from the operation of the wind turbines.

The UK Guidance (2026) confirms that ground borne vibrations from wind turbines do not require assessment given these are very low and "significantly below the human perception threshold and therefore do not result in adverse effects on human receptors" (paragraph 1.22). I further note the findings by Bowdler et al. in "Prediction and assessment of wind turbine noise" (Acoustics Bulletin, 34(2), 2010), a paper which is referenced in the WSP scoping review (2023), that there was no robust evidence to support the suggestion that ground borne vibration from wind turbines adversely affect wind farm neighbours.

I am, therefore, satisfied that ground borne vibration from wind turbines will not result in significant adverse effects on sensitive receptors.

10.12.7.6. **Amplitude Modulation**

A number of the observers have raised concerns regarding amplitude modulation (AM), particularly that AM is not covered by the 2006 Guidelines, the efficiency of

noise mitigation and monitoring, and that measures proposed are unenforceable. Concerns have also been raised that an independent noise assessment is required.

Amplitude Modulation (AM) is addressed by the applicant in Chapter 12 and in Appendix 12-2 of the EIAR and in the Response to Submissions, and I consider the research overview provided to be sufficiently comprehensive and relevant. The applicant notes that the presence of Normal Amplitude Modulation' (NAM) were accounted for in ETSU-R-97[11]. It is noted that unusual AM, often referred to as 'Other Amplitude Modulation' (OAM), is described as an unusual feature of aerodynamic noise from wind turbines. The applicant found that it is not possible to predict if, and when, OAM will occur at planning stage and that reported occurrences were noted to have been intermittent and varied in terms of severity. The applicant also notes that the occurrence OAM, where it occurs frequently and for sustained periods, has the potential to impact negatively on neighbouring properties.

I note that the WSP scoping review (2023) outlines that NAM is well understood and corresponds with the guidance on AM provided in ETSU-R-97, whilst AM referred to as 'other', 'enhanced' or 'abnormal' is less well understood, and "more widely reported as being associated with noise disturbances, and does not correspond with the guidance on AM provided in ETSU-R-97." The WSP scoping review (2023) identified several potential mechanisms, all noted to be influenced by atmospheric factors, contributing to OAM including transient blade stall, inflow turbulence variation, wake effects, and partial refractive rotor shading. It states that the evidence base indicates that wind turbine AM is more prevalent at nighttime, evening and early morning, and this is believed to reflect atmospheric conditions although reference to lower residual sound levels is also noted. The review suggests the influence of wind direction on AM prevalence is more site dependent. Research also found that the audibility of AM "increases adverse impact, but the effect is secondary compared with the overall sound level." The difficulties in predicting AM within the context of development planning and noise assessment guidance is also recognised within the WSP scoping review (2023).

[11] Superseded by ARWTN Guidance (2026)

Having regard to the above, the applicant's research show that it is not possible to measure and quantify OAM using existing methodology, in particular the IoA's 'A Method for Rating Amplitude Modulation in Wind Turbine Noise'[12] is referenced. I note the IOA's reference method (2016) is also referenced in the Draft 2019 Guidelines, the ARWTN Guidance (2026) and the WSP scoping review (2023) found it to be to an appropriate approach measure and quantify AM and made reference to recent updates as part of the IEC 61400-11-2. The applicant's approach in Section 12.7.2 of the EIAR is noted to correspond with the IOA's reference method (2016), and potential mitigation measures to address frequent and sustained OAM identified.

In reference to AM and planning condition, it is noted that the recommendation in the IOA GPG (2013) is not to assign a planning condition to deal with AM. The complexity of a penalty scheme in addressing wind turbine sound measurements was noted in the WSP review (2023) and further research on approach and practicalities are recommended. In the UK, I note the recent ARWTN Guidance (2026) sets out that character corrections are to be applied for the presence of elevated AM when determined through compliance measurements.

I note that several of the observers and the NEHS state that the High Court has found that the 2006 Guidelines do not assess nuisance risk or AM and do not assess or control for other characteristics likely to cause noise nuisance. I concur that the 2006 Guidelines does not make reference to potential wind turbine noise characteristics such as AM. I am, however, satisfied that the operational noise limits for wind turbines are applicable to all noise generated by wind turbines including characteristics such as tonal, AM and low frequency as outlined above. The standard method to address such noise characters, if found to impact on the noise through increased audibility and potential disturbance, have been considered above.

Having regard to the above, I am satisfied that AM within the EIAR is adequately addressed and that there is currently no requirement in applicable guidelines for a

[12] The EIAR refers to the document 'A Method for Rating Amplitude Modulation in Wind Turbine Noise' published in April 2015. However, the only version I could access online, and the version referred to in the 2019 Draft Guidelines is dated 9 August 2016.

penalty scheme to account for elevated AM or OAM. I, therefore, concur with the applicant that current research outlines that there are potential operational noise characteristics that can only be confirmed and addressed during operation of the proposed development. Furthermore, I am satisfied that a planning condition to control noise limits cover all noise generated from the proposed wind farm whether tonal and/or AM. Whilst I note the concern raised by observers that OAM cannot be mitigated or subject to enforcement, I am satisfied that operational changes to the wind turbines including mode management or curtailment of wind turbines are standard methods for reducing wind turbine noise levels.

In the event the Commission is minded to grant permission, I recommend a noise compliance monitoring programme (NCMP) is conditioned.

10.12.7.7. **Tonal Noise**

Observations have raised concerns regarding tonal risk and the potential for impacts on residents from tonal noise.

Chapter 12 outlines that tonality associated with wind turbines is well understood and that this has been considered in accordance with the guidance in ETSU-R-97 and the IOA GPG. Appendix 12-2 references the IOA GPG, which states that “any specific information on tonality at representative receptor separation distances” is highly unlikely to be available at planning application stage. Appendix 12-2 notes that the source data provided for each turbine does not indicate a tonal component and that no tonal penalty has been applied. This is noted to be in accordance with best practice, the IOA GPG approach is to control the potential presence of tones by planning conditions.

The 2006 Guidelines do not address tonal noise specifically but outlines that mechanical noise from a wind turbine is tonal in nature. The Draft 2019 Guidelines state that there is normally no excessive tonal element in the noise from a wind turbine and includes a penalty scheme to control tonal noise characteristics. The WSP scoping review (2023) found that the practicability of controls for sound characteristics should be carefully considered, and refers to its research on amplitude modulation, and the difficulties in predicting such noise characteristics within the context of development planning. Following on from this, UK Guidance

(2026) states that tonal noise characteristics from turbines cannot be predicted and that tonal noise is not an expected general characteristic of wind turbines and when it occurs it is usually associated with design or component malfunction. The UK Guidance (2026) recommends that tonal noise is best controlled through planning conditions and for character corrections to be applied to compliance measurements and not added at application.

Having regard to the above, I am satisfied that tonal noise is adequately considered within the EIAR and that planning conditions to control noise limits arising from the proposed development will cover all noise generated, including tonal noise. Furthermore, I am satisfied that the mitigation measures to deal with complaints received regarding OAM as outlined in Section 12.7.2 is applicable to tonal noise characteristics.

As above, if the Commission is minded to grant permission, I recommend NCMP is conditioned.

10.12.7.8. **Operational BESS**

Observations have raised concerns regarding the impact of noise generated by the BESS on sensitive receptors, and the conclusion of a significant adverse effect within Appendix 12-3. Concerns have also been raised regarding the lack of a cumulative assessment within the EIAR. Appendix 3 of the applicant's Response to Submissions is noted.

The noise impact assessment of the BESS is contained in Appendix 12-3 and a candidate layout to inform the assessment is described therein and relates to the layout shown in Appendix 4-4 of the EIAR (reproduced in Annex 1 of Appendix 12-3). I note the assessment assumes a worst case scenario of all sound sources to be "operating concurrently, continually and with a constant sound level output." An acoustic fence (4m in height) located on the northwest perimeter of the subject site is also noted to be included in the design.

The assessment approach is noted to be based on the British Standard (BS) 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound BS 4142 (2) and with reference to the BS 4142: Technical Note authored by the Association of Noise Consultants' (ANC) Good Practice Working Group (2020).

The applicant notes that the BS 4142 requires that the assessment considers the context in which the sound occurs, and that the outcome of an assessment is an indication as to the likelihood for adverse impact. Having regard to this, the applicant has carried out a two stage assessment comprising the initial estimate of impact followed by consideration of the context within which the sound occurs.

Considering the EPA Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) and classifications therein, the applicant notes the national road within 5km and considers the area an 'Area of Low Background Noise' in terms of noise limit criteria. The noise limit criteria as per NG4 is 35 dBA for night-time, 40 dBA for evening and 45 dBA for daytime.

The initial estimate of impact compares the BS 4142 Rating Level with the Representative Background Sound Level at the 7 BNALs for day time and night time. The outcome of the assessment suggests that no adverse impact is anticipated during day time at any BNAL. During night time, the Rating Level exceeds the Representative Background Sound Level at BNAL07 by a margin of 7 dB and by a margin of 11-14dB at BNALs 01 to 03 suggesting an adverse or significant adverse impact depending on the context.

The second part of the applicant's assessment is a qualitative assessment considering the context in reference to the requirements of BS4142. The assessment considers the absolute values at night time to be more relevant in this instance given the low Rating Levels (the highest is 31 dB) and the very low background levels (23 dB or below). Comparing Specific Sound Levels with Residual Sound Levels, the results indicate a noise level increase at night time of 3-5 dB at four BNALs. This was then considered within the context of the absolute levels remaining low and the operational sound being continuous and relatively low, concluding that the operational noise level and character would not be incongruous within the existing sound environment. The NG 4 noise limit criteria also informed the context, noting that all predicted noise levels are below the 35dB at all receptors both day and night. On that basis, a low impact at all residential receptors during both the daytime and night time was concluded.

I note observers concern that a cumulative assessment of proposed wind turbines and the BESS has not been carried out. Chapter 12 states that "no cumulative noise

effects are anticipated in relation to the BESS. As such no significant cumulative BESS operational noise is anticipated." Having considered the sound levels of the proposed BESS above, and note that these are relatively low, I am satisfied that the proposed BESS would not contribute significantly to the overall operational noise levels.

Having considered the above, I am satisfied that the noise emissions as a result of the operational BESS have been comprehensively assessed. Furthermore, I am satisfied that when the context of absolute sound levels, the residual sound levels and noise criteria are taken into account it has been demonstrated that the impact of operational noise from the BESS would be low at all residential receptors, and as such, the proposed BESS would not result in significant adverse effect.

10.12.8. **Conclusion: Direct and Indirect Effects**

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received. I am satisfied that the main significant direct and indirect effects on noise and vibration that arise during the construction phase of the proposed development can be mitigated by the application of standard good construction practices.

During operation, the noise environment in which the proposed development is situated will change. I am satisfied that noise levels at the sensitive receptors assessed in the EIAR, individual and cumulatively, subject to mitigation measures, will not be significant and noise limits can be controlled by condition. Furthermore, I am satisfied that noise limits can be controlled at the additional sensitive receptor located c. 510m from T5 through the application of wind turbine curtailment and mode management. The extent of operational curtailment required to meet noise limits is not known at this stage.

As noted previously, further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

The Commission should note that a curtailment strategy could require the omission of turbine(s). If minded to grant, the submissions of modelling and curtailment strategy should be conditioned.

10.13. Landscape and Visual

Landscape and Visual is addressed in Chapter 13 of the EIAR and supplemented by Volume 2 Photomontages VP1 to VP15, and the following appendices:

- Appendix 13-1 LVIA Methodology
- Appendix 13-2 Landscape Character Area (LCA) Assessment Tables
- Appendix 13-3 Photomontage Visual Impact Assessment Tables
- Appendix 13-4 LVIA Baseline Map

Chapter 5 and Appendices 5-1 to 5-4 address Population and Human Health and Chapter 14 and Appendices 14-1 to 14-6 addresses Cultural Heritage. The description of the proposed development is set out in Chapter 4 and Appendices 4-1 to 4-6.

10.13.1. Issues Raised

Elected members from Tuam MD and Ballinasloe MD raise concerns in respect of landscape sensitivity, the scale of the proposed development and the impacts arising on the landscape and built environment.

The OPW raise concerns in respect of the impacts of the proposed development on tourist experience of Athenry Castle and visitor centre. I have discussed this issue in Section 9.15 of this report, and I will not be repeating the assessment herein.

Observers are concerned that the proposed development will have detrimental impacts on the landscape. It is stated that the proposed development will erode the character of the landscape and change the landscape from agricultural to industrial. It is stated that the proposed wind turbines will be visible from multiple vantage points and will be visually intrusive and dominant.

Observers raised concerns in respect of the reliability of the assessments undertaken, and state that the LVIA downplays the significance of the impacts and fails to include photomontages for all sensitive receptors.

The Commission will note that the PA assessment states that the proposed development would cause substantial changes to the area because of the size of

the wind turbines but that these are justified with reference to the override requirement to meet renewable energy targets.

10.13.2. **Context**

The LVIA study area comprises all areas within a 20 km radius of the subject site. The study area for the impacts on Landscape Character Areas (or Landscape Character Units) comprises all areas within a 15 km radius of the subject site.

The study area for the LVIA is predominantly in County Galway. A small section of the study area occurs within County Roscommon. This area is scoped out of the LVIA study area on the basis that there is no theoretical visibility of the subject site.

The turbine models shown in the photomontages are scenario 3 - Maximum Hub Height, Minimum Rotor Diameter. Viewpoints VP14 and VP15 include comparative wirelines of the other turbine model scenarios: Scenario 1 – Minimum Hub Height, Maximum Rotor Diameter, and Scenario 2 - Median Hub Height, Median Rotor Diameter.

10.13.3. **Baseline**

The baseline for the LVIA is set out in Section 13.4 ‘Landscape Baseline’ and Section 13.5 ‘Visual Baseline’ and identifies relevant Viewpoints (VP) and Photowires (PW).

Landscape character (within study area and scoped in):

- The subject site and most of the study area is located within in the North Galway Complex Landscape Type (LCT). The landscape sensitivity as defined by the CDP for the study area excluding urban areas is classed as ‘Low Sensitivity’, which is defined as “*Unlikely to be adversely affected by change*” (EIAR Figure 13-5). There are no landscape designations within the study area.
- LCU 5e - North River Clare Basin Unit, the subject site falls within this unit (EIAR Figure 13-8) and VPs 01/02/03/05/07/09/10/12/14/15 are located within the LCU.

- G – LCU 6b Southern River Clare Basin Unit, located approximately 4.2km north of the nearest proposed turbine and extending beyond the LCA study area (VP11). Overlaps or follows sections of the GCR.
- Other LUCs: G – LCU 5b Castlegar Basin Unit, located approximately 2.3km east of the nearest proposed turbine and extending beyond the LCA study area. G – LCU 5c Springfield Basin Unit, located approximately 6.9km southwest of the nearest proposed turbine and extending beyond the LCA study area (VP08).
- The characteristics of the 'Hilly and Flat Farmland' landscape type in the 2006 Guidelines and draft 2019 Guidelines considered most applicable to the subject site and surrounding area.

Visual Receptors (within the study area and scoped in):

- Settlements/villages/rural areas:
  - Within 5Km, Barnaderg (VP02), Lavallly (VP01); Moylough (VP04) and Carrowmanagh (VP07).
  - Within 10km; Kilkerrin/Clonberne (VP09), Mountbellew (PW-C), Knockroe Hill and Gurteen (VP12).
  - Within 15km; Tuam (VP06) and Glenmaddy (VP08).
- Local residential receptors within 3km, Figure 13-17 (VP03, VP05, VP10, VP14, VP15 and PW-F).
- Recreational destinations/routes:
  - Suck Valley Way, located 18.3km (PW-E). There are no designated scenic routes within the LVIA study area.
  - Carrownagappul Walk - The Living Bog (VP13), 10.7km east; Richmond Esker Nature Reserve (PW-B) at 4.35km northeast; and Knockmoy Cistercian Abbey (PW-A/-D), 6.2km southwest,
- Protected Views: There are 2 no. Protected Views in the study area, and G-V42 Glenmaddy Lough, located 13.8km to the northeast is scoped in (VP08).

G-39 Summerville Lough was scoped out for further assessment on the basis that it is directed away from the proposed turbines.

- Transport Routes (within 5km): N63 (VP03), R328 (VP04) and R332 (VP02/03/06), and all local roads within 3km (VP05/07/10/11/12/14/15). All transport routes beyond 5km scoped out.

Cumulative (with study area)**:** Operational, consented and proposed wind farms are listed in Table 13-13 and shown on Figure 13-15.

10.13.4. Potential Effects

Table 10.8: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • Landscape and visual setting of the site would remain unchanged. Considered there would likely be future interest in developing this landscape for wind energy production.
b) <u>Construction:</u> • Landscape: Earthworks, such as the cut and fill of material, would require removal of existing landcover and storage of same. Short term, negative, moderate. • Visual Receptors: There may be periods of time where partially constructed turbines are visible. Short term, negative, slight. • Grid connection components: short term, negative and slight effect on landscape and moderate effect on visual receptors.
c) <u>Operation:</u> Landscape receptors (assessed in Appendix 13-2):

- The Site: Highly localised to the footprint of the proposed development from the introduction of the turbines, landscape of Low sensitivity. Substantial magnitude of change, and effect is long term, negative, Moderate.
- LCU-5e: Primarily full theoretical visibility within 5km. Beyond 5km, where visible, at that distance and within the flat landscape of the LCU, the proposed turbines will appear as very modest background elements. Low sensitivity, Moderate Magnitude of Change, and effect is long term, negative, Slight.
- Other LCUs: Low sensitivity, Moderate (5b/5c) or Slight (6b) Magnitude of Change, and effect is long term, negative, Slight (5b/5c/6b).
- Grid connection components: effects arising from the are slight.

Visual Receptors:

- Protected View (VP08): Turbines do not impact on the main focus west of G-V42 Glenmaddy Turlough. Blades/tips visible beyond the distant treeline, over a very narrow horizontal extent of the background view. High sensitivity, Negligible magnitude of change, and effect is long term, negative, Slight.
- Recreational Amenities: Reference to views from VP13, PW-B, PW-A, PW-D and PW-E. High sensitivity, Negligible to Slight magnitude of change and significance of visual effects ranging from Not Significant to Slight.
- Settlements within 5km: A mix of visual screening resulting in little to no visibility to or visibility beyond the ridgeline from more elevated views from Barnaderg (VP02, VP07). Potential for wide-ranging views across the countryside with the proposed turbines occupying a very narrow extent of the view, set-back from the Levally (VP01). Views of the proposed turbines are predominantly screened by the treeline and are set-back behind the local topography from the R328, Moylough (VP04). Medium sensitivity, Slight magnitude of change, and effect is long term, negative, Slight.
- Settlements within 5-15km: Little or no views and where views occur, turbines appear setback. Turbines occupy a narrow horizontal extent of the views from Mountbellew, Tuam (VP06) and Glenmaddy (VP08). No visibility from within

Tuam itself. Medium sensitivity, Negligible Magnitude of Change, and effect is long term, negative, not significant to Slight.

- Transport Routes: The N63, R328 and R332 are largely used by commuters, who will not be focused on the surrounding views and long ranging views are limited. Low sensitivity, and effect is Slight.
- Local Residential Receptors (within 3km): Most dwellings are located on roads with varied screening, and many receptors may experience open views towards the proposed turbines. Views from north (VP05 and VP15), east (VP10) and south (VP03), High sensitivity, Moderate magnitude of change and effect is deemed Moderate, **Significant**. Views from west (VP14 and PW-F), High sensitivity, Substantial magnitude of change and effect is **Significant**.
    - Appendix 13-3: The viewpoint assessment deems the significance of the visual effects on VP03, VP05, VP10 and VP15 to be Moderate and **Significant**, and on VP14 to be Substantial and **Very Significant.**
- Turbine model Scenario 1 and 2: Significance of effect not altered.

d) Decommissioning:

- Similar effects to those experienced during the construction phase, Short term, negative and Slight.
- Visual effects of the grid connection components (substation and BESS) as permanent.

e) Cumulative:

- Landscape (Operational): Proposed development, existing Cloonlusk Wind Farm, permitted Cloonscaragh Single Turbine, and proposed Clonberne Wind Farm all located within the northwest of the LCU- 5e. In-combination effects with the Proposed Project are unlikely to cause significant cumulative landscape effects.
- Visual (Operational):
    - No potential for Significant cumulative effects arising as a result of the Proposed Project.

- Viewpoints VP02, VP06 and VP07 may experience in succession views of the proposed development with existing and permitted wind farms. The potential for cumulative visual effects is considered very low.
- Receptors represented by viewpoints within 5km may experience cumulative views of the proposed development with proposed Clonberne Wind Farm in succession similar to VP01, VPO09 and VP15.
- No predicted cumulative visual effects with proposed Laurclavagh Wind Farm or Gannow Wind Farm.

10.13.5. **Mitigation**

Notable measures include the following:

- Measures outlined in the CEMP (Appendix 4-5) including minimising excavation depths and volumes, reuse of excavated materials will be re-used within the subject site, where possible, and replacement planting and topsoil measures and general site housekeeping.
- Construction of 2m × 8m berms along the northern and western perimeter of the substation and BESS compound at the start of the construction phase and will be retained during the operational phase. Planting of semi-mature vegetation is proposed both on the berm and adjacent lands to the north and west of the compound.
- Biodiversity Management and Enhancement Plan (BMEP).

10.13.6. **Residual Effects**

- Construction: As above summary, effects on landscape and visual receptors are residual.
- Operational: As above summary, effects on landscape and visual receptors are residual. The viewpoint assessment in Appendix 13-3 deems the residual significance of the visual effects on VP03, VP05, VP10 and VP15 to be Moderate and Not Significant, and on VP14 to be Significant.

10.13.7. Analysis, Evaluation and Assessment: Direct and Indirect Effects

10.13.7.1. Robustness of Methodology

Concerns are raised regarding the methodology employed in undertaking the LVIA including key aspects such as zone of theoretical visibility, visualisation of the baseline information, landscape classification, and assessment of significance of visual impacts. Queries are raised regarding the impacts of the design flexibility sought on the reliability of the LVIA. Concerns have been raised that the significance of effects arising from the proposed development are downgraded on the basis of wind turbine policy.

LVIA methodology: The LVIA methodology (Appendix 13-1) is primarily based on the 'Guidelines for Landscape and Visual Impact Assessment Third Edition' (GLVIA3) (LI & IMEA, 2013) and the 'Notes and Clarifications on Aspects of the GLVIA3 (LI 2024). The significance methodology is informed by the EPA Guidelines (2022). The siting and design of the proposed wind farm and the study area is informed by the 2006 Guidelines and the 2019 Draft Guidelines, and the 2017 Scottish Natural Heritage guidance (SNH)[13]. The cumulative methodology was also informed by the Nature Scot guidance (2021)[14].

Zone of Theoretical Visibility (ZTV): ZTV figures has been prepared in accordance with the 2006 Guidelines and the 2019 Draft Guidelines and best practice guidance. I note the OS map is legible, and areas of theoretical visibility are identifiable and that the ZTV is based on a 'bare-earth' Digital Terrain Model (DTM), which represents the worst-case scenario in respect of potential visibility. As previously, the electronic copy of the Chapter 13 ZTV figures with all layers correctly displayed as per the original application paper copy were included in the applicant's Response to Submissions and circulated to all parties of the application.

Viewpoints: In terms of viewpoint selection, the LVIA includes a viewpoint analysis of 15 VPs representing the main visual receptors as presented in Appendix 14.3 of the EIAR. Of these, I note five VPs and one photowire viewpoint are located within 3km of the proposed wind turbines. The LVIA outlines that these viewpoints were

[13] SNH, 'Siting and Designing Wind Farms in the Landscape, Version 3a', 2017.
[14] Nature Scot, 'Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments', 2021.

specifically selected to represent local residents and community receptors. The 2006 Guidelines and the 2019 Draft Guidelines outline that viewpoints should be chosen to best represent the study area and should be taken at varying distances from the subject site. The SNH (2017) guidance which informs the LVIA methodology (Appendix 13-1) outlines that the number of viewpoints is only one component of the LVIA and that the number of viewpoints should be proportionate. In regard to local residents, the guidance emphasises that the varying conditions in which the wind farm will be experienced by resident living, working and traveling should be presented.

Photomontage: Site surveys are noted to have been carried out in 2021, 2022, 2023, and 2024 and these surveys form the basis of the Route Screening Analysis and photomontages represented with the EIAR. The photomontage visualisations are noted to have been informed by visual representation guidance published by the Landscape Institute (2019)[15] and SNH (2017)[16]. The viewpoint selection and wirelines were also informed by the 2006 Guidelines, the Draft 2019 Guidelines and the GLVIA3. I note the primary turbine model with a tip height of 180m used for the assessment is the combination of the maximum hub height of 105m and the minimum rotor diameter of 150m. Two alternative scenarios with lower hub heights and greater rotor diameter and the proposed 180m tip height were modelled for two viewpoints (VP14 and VP15) with close range views and where the different scale in turbine configuration is likely to be most visible.

Determination of significance of effects: Concerns have been raised in relation to determining the significance of residual effects, and the potential downgrading of effects. I note Section 1.9 (Appendix 13-1) outlines that in some cases, mitigating factors merit a reduction in classification and that an "over-reliance on the formulaic process, which is heavily influenced by the definitions of 'Sensitivity' and 'Magnitude of Change' contained in the matrices can lead to a failure of properly accounting for the full range of circumstances and factors at play in the determination of the final significance rating of a visual effect" and reference is made to the GLVIA3. I have reviewed the mitigating factors presented in the landscape character assessment

[15] Landscape Institute, 'Visual Representation of Development Proposals', Technical Guidance Note 06/19, 2019.
[16] Scottish Natural Heritage, 'Visual Representation of Wind Farms, Version 2.2', 2017.

(Appendix 13.2) and the viewpoint assessment (Appendix 13-3), and note that the landscape and visual assessment in Chapter 13 is largely informed by the two appendices.

The 'Mitigating Factors' outlined in Appendix 13-2 are noted to relate mainly to visibility, the location of the proposed development within the LCU and sensitivity of same or the distance to the LCU. In my view, these 'Mitigation Factors' are factors already informing the considerations landscape sensitivity and the visibility of the proposed development in the "formulaic process" and as such, the degree to which they alter the 'Significance of Effect' is not evidently clear within the assessment.

In Appendix 13-3, the 'Mitigating Factors' are noted to restate landscape sensitivity, refer to setback distances, views of designated/scenic features, visibility, description of photomontage and other receptors. What is not clear from the viewpoint assessment is whether the mitigating factors used in determining the residual significance of effects are in reference to the view being assessed or in reference to the wider receptor group for which the viewpoint is representative, or both. This lack of clarity becomes evident in the residential receptors assessment in Chapter 13, where the residual visual effect of a representative viewpoint determines the significance of the residual visual effect on the residential receptor group within an area. This approach does not necessarily correspond with Section 13.7.3.2 of Chapter 13 which outlines that: "A key focus in this LVIA is identifying the scenarios where the greatest likelihood of significant effects occurs. It is key to note that the residual significant impacts only occur for a low number of receptors and is not representative of effects on receptors in a vast proportion of the LVIA Study Area."

Conclusion: Having regard to the above, I consider that the LVIA methodology including, the visualisations, to have been informed by best practice guidelines and to have had regard to the 2006 Guidelines and the Draft 2019 Guidelines. I consider that the baseline mapping and images presented in the LVIA are sufficiently accurate and representative of the area surrounding the subject site.

I have inspected the submitted photography, wirelines and photomontages (EIAR Volume 2) and I am satisfied that these are consistent with the methodology and that the photomontages give a reasonable impression of the scale of the turbines and the distance to the turbines in line with applicable standards. I consider the

location and views from viewpoints to provide a proportional representation of the range of views and viewers in respect of the proposed development. Furthermore, I concur with the LVIA that the turbine model with the maximum hub height, where there is no variation in tip height e.g. 180m, visually shows the greatest extent of the turbine structures.

Given the lack of clarity in the methodology applied to the determination of significance of effects in the LVIA, I have disregarded the mitigating factors stage of the EIAR and in my assessment below found all landscape and visual effects to be residual. In carrying out my assessment, I have taken account of the range of landscape and visual and cumulative effects likely to occur within the local area.

10.13.7.2. **Operational Landscape Effects**

The Tuam Municipal District Members and the Ballinasloe Municipal District Members both state that the scale of the proposed wind turbines is not in keeping with the landscape. Several observers also raise concerns in respect of the impacts on the landscape, the change from rural to industrial and the development will erode and overwhelm the areas landscape character.

As summarised above, the CDP has classified this landscape except the urban areas to be of 'Low' sensitivity and a landscape 'unlikely to be adversely affected by change'. There are no landscape designations within the study area. The subject site is located within the North Galway Complex Landscape Type (LCT) and within the landscape character unit, LCU5e – North River Clase Basin Unit. LCU-5e occupies an extensive area of northeast Galway and is described in the CDP Appendix 4 as an "extensive, largely level plain with low enclosure", and a settled working landscape with large regular field patterns and extensive areas of bog in east. Having regard to the methodology of the LVIA, considering landscape value and susceptibility to change criteria and the 'Low' landscape sensitivity classification in the CDP, I concur with the LVIA that the sensitivity of subject site and the LCU5e – North River Clase Basin Unit can be deemed 'Low'. The proposed development is noted to be located within a rural, flat lowland landscape, and heavily modified working landscape.

I concur findings of the LVIA that the landscape of the subject site will undergo a substantial change by the introduction of the proposed development, leading to a substantial magnitude of change. Taking account of landscape changes as a result of prominence and scale within a relatively open landscape with localised undulating topography, I consider the proposed development would alter the local characteristics of the LCU5e. As such, I consider the substantial magnitude of change would extend beyond the footprint of the proposed development tup to 1 to 2km from the proposed turbines. Beyond this, I concur with the LVIA, as per Appendix 13-2, that the overall magnitude of change on the LCU5e would be Moderate and that this takes account of the cumulative effects on the landscape character of the proposed development in combination with existing and permitted wind farms and the proposed Clonberne Wind Farm. I am satisfied that the landscape effect as a result of the proposed development on the LCU5e would be as per the EIAR, long term, negative, moderate (moderate/minor) to slight (minor) and Not Significant, and that the effect would be cumulative.

10.13.7.3. **Operational Visual Effects**

Observers raise concerns in respect of the visual effects arising from the proposed development including impact on views from homes and settlements and that the proposed development will be visually dominant by virtue of its size and will be visible from multiple vantage points. Observers raise concerns that the settlements of Barnaderg and Knock are not referred to in the LVIA and that chosen viewpoints are located further from the proposed wind turbines than many of the existing dwellings. Concerns regarding the cumulative assessment in respect of visual and landscape effects have also been raised.

Local visual receptors: The LVIA recognises that greatest visual effect arising as result of the proposed development is likely to be experienced by some local residential receptors. Clusters of residential receptors within/near townlands are identified to the north (Cloondahamper (Brown)), to the east (Cooloo Mountain), to the south (Slievegorm and Brierfield North), and to the west (Hillsbrook Demesne and Tigreenaun). The LVIA is noted to refer to VPs, specifically VP14, VP03, VP10, VP05 and VP15 in the assessment of visual effects as a result of the proposed development on residential receptors within 3km. The settlements of Barnaderg,

Levally and Moylough are located within 3 to 5km of the proposed turbines and representative viewpoints are VP02, VP07, VP01 and VP04.

I note that views of the proposed development will vary depending on the position within the local topography and natural screening and range from no views to intermittent views to open views. The Route Screening Analysis in Figure 13-17 is noted. Whilst the landscape is generally flat, the potential for slightly elevated views to the north and northeast are noted. The potential for more expansive views is noted from the northwest and west. The turbines, where visible, appear more elevated from the east and south as the topography deeps. There is potential for in combination views of the proposed development and the proposed Clonberne Wind Farm from the southeast and southwest and for sequential views of the two developments when travelling long the local roads, specifically to the northwest and northeast of the subject site is noted.

Applying the methodology in Appendix 13-3, I consider the magnitude of change for receptors within 3km to range from slight where views are intermittent or glimpsed to moderate where turbines are partially visible or visible over a medium extent to substantial where views are uninterrupted primary views. The significance of effect is Moderate and Not Significant where views are intermittent or glimpsed increasing to Moderate or Major/Moderate and **Significant** where there are more close range partial or uninterrupted views.

I consider the significance of visual effects as a result of the proposed development on residential receptors including settlements diminish with distance. For visual receptors located to the north and northeast, the potential for sequential views when travelling and partial views, but not in the same view, of both the proposed development and the proposed Clonberne Wind Farm are noted. This could lead to a Moderate magnitude of change and a Moderate and Not Significant cumulative effect. I concur with the LVIA that the magnitude of change on the settlements within 5km, Barnaderg, Levally and Moylough are Slight leading to a minor and Not Significant cumulative effect. I note the townland of Knock immediately adjoins Barnaderg and consider the visual assessment of Barnaderg to be representative.

Visual clutter: Whilst I note observations concern regarding views of tangled turbine blades, overall, I consider the composition of the turbines achieves a largely

evenly spaced and balanced array with minimal overlapping in the majority of the selected viewpoints. I further note that in instances were overlapping of turbines occurs, the overall array of the wind turbines within the view are reduced. I have had regard to the advice with the 2006 Guidelines and the Draft 2019 Guidelines.

Recreational receptors: Whilst I noted observers concerns that the proposed development would impede residents' enjoyment of nature and natural areas, including peatlands, the subject site is in private ownership and I am not aware of any public access rights. I concur with the LVIA that the proposed development would not result in significant visual effects on recreational routes or destinations.

Long range views: Whilst concerns are noted with regard to impact on long range views of Croagh Patrick and the mountainous areas on the west coast and impact on views of sunrises and sunsets are noted, I am satisfied that the position of the proposed turbines within a relatively flat landscape would obscure or significantly affect long range views.

10.13.7.4. **Cumulative Effects**

As per section 9.10, I am satisfied that the cumulative wind farm baseline in Section 13.6 of the EIAR and shown on Figure 13-15 is sufficiently up to date at the time of writing. Having reviewed the LVIA, I am satisfied that a cumulative assessment has been carried out and that this is evident in Appendix 13-2 Landscape Character Assessment, Appendix 13-3 Viewpoint Assessment including associated wirelines and photomontages and in Section 13.7.3.5 of Chapter 13. A cumulative ZTV does not appear to have been submitted by the applicant.

In relation to the proposed Clonberne Wind Farm, I am satisfied that the determination of magnitude of landscape change in Appendix 13-2 have taken into account this development in combination with the proposed development. I have considered cumulative landscape effects in my assessment above.

The viewpoint assessment in Appendix 13-3 when considering the potential for cumulative visual effects to arise of as a result of the proposed development in combination with Clonberne Wind Farm states that "cumulative visual effects are uncertain and reliant on the outcome of the consenting system". Whilst the uncertainties of the outcome of the consenting system is noted, this does not

prevent a determination on the likely significance of the cumulative visual effect of the proposed development in combination with the proposed Clonberne Wind Farm. I am, however, satisfied that an adequate visualisation and description of the likely cumulative visual effects have been provided in the LVIA to determine the magnitude of change and the significance of effect. I have considered cumulative visual effects in my assessment above.

10.13.7.5. **Light Pollution**

Observers raise concerns regarding the visual impact of the proposed development at night and that the LVIA does not include any nighttime views. It is stated that no nighttime assessments were undertaken and that the lighting on the top of the proposed turbines will cause light pollution during the hours of darkness.

As per Chapter 15 of the EIAR and reconfirmed in the applicant's Response to Submissions, the aeronautical obstacle warning lighting proposed at the top of the wind turbines is a safety requirement of both the Department of Defence (DOD) and the Irish Aviation Authority (IAA). Submissions from both prescribed bodies and requirements for aeronautical obstacle warning lighting are summarised in Section 4.3 above, and I have addressed aviation matters in Section 10.15 below.

As noted by observer, no nighttime visual assessment has been carried out by the applicant. In this regard, I note there are no relevant Irish's guidelines on assessing the effects from aviation lighting and that there is no requirement to carry out such an assessment in the 2006 Guidelines or the Draft 2019 Guidelines.

To address the matter, I have considered the Scottish guidelines "Guidance on Aviation Lighting Impact Assessment" by NatureScot (2024), which applies the GLVIA 3 assessment methodology and differentiate the assessment from the more quantitative lighting assessment carried out by lighting engineers. The NatureScot guidance (2024) notes that aviation lights are not a new feature in the landscape and does "not cause sky glow, but can contrast with natural darkness, and can draw attention" and "are generally seen as points of red light, especially where there is a high degree of contrast in the view." The guidelines note that red lights are among the most noticeable colour but are "not perceived as being as bright as other colours at the same intensity" and that visual receptors "perceive and experience

light in different ways, particularly at night." Local residents are identified as having a lower sensitivity at night compared to daytime given the influence of lighting at home, settlements and other nearby light sources, and that activities in the rural landscape at night often involve some form of personal light for safety. Drivers using roads are also identified as of lower susceptibility at nighttime as their focus would be on the road illuminated by headlights.

Having regard to the above, I note there are no designated 'Dark Skies' area within the study area of the LVIA. Of note, Section 8.10.4 of the CDP states that "the development of dark skies designated areas in the county primarily with the Conamara area due to the low population density and its distance from any major cities". As above, there are no designated landscapes within the LVIA study area. The subject site and surrounding area are located within LCU5e – North River Clase Basin Unit which is noted for its flatness, a working and heavily modified landscape shaped by human influences including scattered residential properties, farms and settlements. I am, therefore, satisfied that the susceptibility of the identified landscape and visual receptors would be low and that the proposed development is unlikely to result in significant landscape or visual effects as a result of aviation warning lighting.

Considering the above, and taking account of the aviation safety requirements, the type of lights and their location at the nacelle of the wind turbines, it is my view, that the proposed development satisfies relevant control of light pollution criteria of Section 7.9.3 of the CDP and, therefore, satisfies the criteria of limiting light pollution as per Policy Objective LP 3.

10.13.8. **Conclusion: Direct and Indirect Effects**

Having regard to the examination of environmental information in Chapter 13 and the accompanying documentation within Volume 2 the EIAR and the LVIA, I consider the landscape effects as a result of proposed development on the landscape character to be not significant. I consider significant visual effects as a result of the proposed development will be experienced by a small number of residential receptors within 3km of the proposed wind turbines, where these will experience close range partial views or uninterrupted primary views of the proposed

turbines. I am satisfied that residential receptors within 3km of the proposed wind turbines where there are no views or intermittent or limited views will not experience significant visual effects, and that visual effects reduce to not significant beyond 3km. Other visual receptors will not experience significant views on the basis of, or a combination of, intermittent, limited or no views, visual extent, distance and the context of the landscape. In reaching this conclusion, I have had regard to the cumulative impact of other wind farms located within the LVIA study area.

On balance, based on National Policy supporting renewable energy (see Section 7.0), I consider that the potential benefits associated with renewable energy generation including wind energy within the context of a climate emergency, outweigh the potential adverse localised landscape character effect and potential perceived adverse localised visual effect for a small number of residential receptors. I am therefore satisfied, that the proposed development would be consistent with the Climate Act and National Policy in support of renewable energy and a refusal of permission would not be warranted on the basis of residual landscape and visual effects.

10.14. **Cultural Heritage**

Cultural Heritage is addressed in Chapter 14 and the following Appendices;

- 14-1 Plates
- 14-2 Assessment of Impacts on the Archaeological, Architectural and Cultural Heritage Resource
- 14-3 Legislation Protecting the Archaeological Resource
- 14-4 Legislation Protecting the Architectural Resource
- 14-5 Impact Assessment and the Cultural Heritage Resource
- 14-6 Mitigation Measures and the Cultural Heritage Resource

Chapter 13 of the EIAR sets out the Landscape and Visual Assessment (LVIA) and Zone of Theoretical Visibility (ZTV), which are referred to in the assessment of cultural heritage impacts.

10.14.1. **Issues Raised**

The submission from the Department of Housing, Local Government and Heritage does not raise concerns in respect of archaeological impacts, but notes that no advance archaeological investigations have been undertaken within the subject site boundary. The submission from the Office of Public Works raised concerns regarding the lack of assessment in the EIAR of impacts on the 9 no. monuments in state care that are within 21 km of the subject site.

Concerns are raised by the observers in respect of the effects of the proposed development on areas of cultural importance in the lands surrounding the subject site.

Concerns have been raised by observers regarding the loss of cultural heritage and local history from the area as a result of depopulation. Matters such as depopulation have been address under Population and Human health.

10.14.2. **Context**

- The archaeological, cultural and historical study area for the wind farm comprises lands within 2km, 5 km and 10 km of the subject site.
- The study area for the TDR extends to 50 m from the route.
- The study area for the GCR is 50 m from the route.

10.14.3. **Baseline**

The baseline is set out in Section 14.3 of the EIAR.

- There are two **National Monuments** located within 5-10 km of the subject site including NM No 278 ‘Church: Abbert Demesne’ (GA058-002002; EIAR Ref. AH95) and NM No. 166 Knockmoy Cistercian Abbey (GA058-004001; EIAR Ref. AH96).
- There is 1 no. **Record of Monuments and Places** (RMP) structure within the subject site, House - 18th/19th century, Elmhill (GA045-019, EIAR Ref. AH91). There are further 7 RMP features within 1km of the proposed turbines (EIAR refs. AH85, AH90, AH86, AH84, AH93, AH94, AH92)**.**

- There are no **Record of Protected Structure** (RPS) or **National Inventory of Architectural Heritage** (NIAH) structures within the subject site. There are 11 structures within 5km.
- There is one designed landscape recorded within the **NIAH Garden Survey** located within 1km of the proposed turbines, Hillsbrook House demesne (NIAH GA5319; EIAR Refs. DL2).
- Non-statutory features within the subject site: Previously unrecorded cultural heritage sites comprising of buildings and stone walls, and which overlaps with the footprint of the proposed development, include EIAR refs. CH14, CH40 and CH63. EIAR ref. CH 58 overlaps with the substation. Streams are identified as Areas of Archaeological Potential (EIAR Ref. AAP1-5). Areas of raised bog within the subject site are stated to have a general archaeological potential. Townland boundaries delineated by streams, a ditch, and a local road (L6301) (EIAR Refs. TB1 to TB6*).* Five Areas of Archaeological Potential which comprises streams are identified within the subject site (EIAR refs. AAP1 to AAP5)
- Grid Connection route: The GCR passes through the Zone of Notification of two RMPs, passing under the bridge, Ballinderry (RMP No. GA043 009001; GA043 009002; EIAR Ref. AH2) and in proximity to house, Gortbeg (RMP No. GA044-061; EIAR Ref. AH3). The GCR passes below the bridge at Ballynastuckaun, RPS ref. 3930; 30405801 (EIAR ref. BH2). A number of non-statutory features are identified along the route (EIAR refs. CH1 to CH11 and CH14 to CH19).

10.14.4. **Potential Effects**

Table 10.9: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) Do Nothing: • There would be no change to the archaeological, architectural or cultural heritage resources.

b) Construction:

Recorded Sites:

- Proposed development: No direct or indirect effects.
- GCR: Laying of cables within public roads within Zone of Notification for EIAR ref. AH3, AH2, potential effects direct, negative (permanent) slight to moderate. Road bridge (BH2), direct effects avoided.

Unrecorded Sites:

- Previously unidentified features, effects will be direct negative (permanent), slight (Ch14), moderate (CH40, CH58), moderate to significant (CH63).
- Townland boundaries (incl. watercourses) and Areas of Archaeological Potential : No instream works proposed, no direct effects to watercourse (TB1, TB2, TB4 or AAP1 to AAP5) are predicted. Effects on EIAR refs TB3 (road) and TB6 (ditch) limited to small sections, direct, negative (permanent) and slight.

Unknown archaeological features: Effects from ground disturbance, direct, negative (permanent) moderate to significant.

c) Operation

All operational effects are considered long term and indirect. No direct effects identified.

Recorded Sites:

- National Monuments: Abbert Demesne (AH95) and Knockmoy Abbey (AH96), Very High sensitivity, low magnitude of impact, negative, moderate.
- RMPs (excl. NMs): Enclosure/Children's burial ground (AH86) at Cooloo, Ringfort (AH90) and House (AH91) at Elmhill, Ringfort – rath (AH92) and Children's burial ground etc. (AH93) at Cloonascragh, High sensitivity, Medium magnitude of impact, moderate, Not Significant.
- All other predicted effects were no effect or negative, not significant or imperceptible or slight effect, Not Significant.

Unrecorded sites: • Vernacular buildings (CH21, CH23, CH24, CH31, CH42 and CH50) and upstanding ruins of buildings (CH37, CH41), Medium sensitivity, Medium magnitude of impact, negative, Moderate, Not Significant. • All other Archaeological Heritage sites, Built Heritage sites, Designed Landscapes and Cultural Heritage sites, long term direct and indirect, imperceptible to slight effects, Not Significant. GCR: No operational effects identified.
d) Decommissioning: • No new ground disturbances, no negative effects predicted.
e) Cumulative – other developments: • Construction: No negative cumulative effects identified. • Operational: No cumulative impacts identified that are greater than impacts already predicted as part of each development. No significant negative cumulative effects.

10.14.5. **Mitigation**

Notable measures include the following:

- Target geophysical survey under licence will be carried out at the proposed construction compound (CH63).
- Programme of targeted archaeological test trenching under licence will be carried out at the accessible locations of proposed infrastructure (incl. CH58).
- Archaeological monitoring under licence of works at townland boundaries, during all topsoil stripping, and within the RMPs Zone of Notification (AH2 and AH3).
- Pre-construction survey and photographic record of upstanding elements of previously unrecorded cultural heritage receptors (CH14, CH40, CH58).

10.14.6. **Residual Effects**

- Construction: Residual effects will be direct, negative (permanent), ranging from not significant to imperceptible to slight, Not Significant.
- Operational: As above summary, no possible mitigation, indirect effects are residual ranging from imperceptible to moderate, Not Significant.

10.14.7. **Analysis, Evaluation and Assessment: Direct and Indirect Effects**

10.14.7.1. **National Monuments (in State Care):**

As set out previously, the OPW submission queried the assessment of National Monuments in terms of ZTV analysis, baseline photographs and cumulative. The applicant in the Response to Submissions does not provide any additional assessment of national monuments. The applicant refers to the LVIA methodology set out in appendix 13-1 in relation to the selection of viewpoints which includes ZTV analysis. The response also includes legible electronic copies of the LVIA ZTV figures including 13-1, 13-9, 13-14 and 13-16, as noted in Section 4.5 above, and reconfirms the 10km study area for Sites of national significance. I note the OPW did not provide a response to the circulation of same.

As above, there are 2 national monuments within a 10km study area, and both were assessed in Chapter 14 of the EIAR. Abbey Knockmoy (NM 166) was also assessed in the LVIA (Chapter 13) as a cultural heritage visitor attraction. The Church at Abbert Demesne (NM No. 278, EIAR Ref. AH95) described as upstanding remains in Table 14-6 of the EIAR, is located 5.6km to the south of T1. I note from the Historic Environment Viewer[17] the Church of 18-19th-C date is "roughly centrally placed within an early ecclesiastical enclosure" (RMP ref. GA058-001----). As per Appendix 13-4, there is theoretical visibility of all turbines from this national monument. A low magnitude of impact is concluded within Appendix 14-2, however I note no descriptive assessment of indirect effects has been provided. Having regard to the methodology of Chapter 14 (Table 14-3), having visited the subject site and reviewed views within the surrounding landscape (PW-A and VP11), I would concur with the finding of the EIAR of a low magnitude of impact on

[17] Visited 08/09/26: Historic Environment Viewer - National Monuments Service

the setting of the national monument. I am, therefore, satisfied that the proposed development would not result in significant indirect effects on the setting of the national monument.

Knockmoy Cistercian Abbey (NM No. 166, EIAR Ref. AH96), described as upstanding remains is located 6.2km to the southwest of T1. I note from the Historic Environment Viewer[18] that the remains comprise a "large conserved transitional style church" of early 13th-C date and ruined buildings including cloister and overlooks Abbert River to the south. I note the findings of Chapter 14 of low magnitude of impact, although as above, no descriptive assessment of indirect effects is provided in Appendix 14-2. The LVIA reports partial theoretical visibility and that there will be limited visibility from the abbey ruins. Within the context of the wider landscape, the LVIA finds that there is the potential for visual receptors to experience combined views of the proposed development and the abbey ruins from elevated vantage points. The LVIA finds the magnitude of change to be slight. Having regard to the methodology of Chapter 14 (Table 14-3), having visited the subject site and reviewed the LVIA including views within the surrounding landscape (PW-A and PW-D), I would concur with the finding of the EIAR of a low magnitude of impact. I am, therefore, satisfied that the proposed development would not result in significant indirect effects on the setting of the national monument.

There is the potential for the proposed development to be visible in combination with the proposed Clonberne Wind Farm from both Church at Abbert Demesne (NM No. 278) and Knockmoy Cistercian Abbey (NM No. 166, AH 96). Views, where these are not screened by intervening topography, vegetation and buildings, would be distant (>10km) and to the north and northeast of the proposed development. The existing two turbines at Cloonlusk Wind Farm and the permitted Cloonascragh Single Turbine are both located to the northwest of Knockmoy Cistercian Abbey (NM No. 166) and given the intervening distance will not be viewed in combination with the proposed development from these national monuments. I, therefore, concur with the findings of the EIAR that the cumulative effect will not be greater than the effect predicted for the proposed development.

[18] Visited 08/09/26: Historic Environment Viewer - National Monuments Service

The OPW specifically refers to Athenry Castle (NM406) as a visitor attraction which is located outside the 20km LVIA study area to the south of the subject site. Athenry Castle is located within the built up context of Athenry, there is no theoretical visibility of the proposed wind turbines (Appendix 13-4) and having visited the national monument, I note the potential for elevated views towards the north to be very limited. I further note no or limited theoretical visibility of the proposed wind turbines for the remaining 6 national monuments sites identified by OPW which are located between 12 to 17km from the proposed turbines. These include Tuam High Cross (NM505), Church & Round Tower, Kilbennen (NM 48), Dunmore Abbey, Castlefarm (NM 273), Dunmore Castle, Castlefarm (NM 248), and Bawn & house, Caheravoley (NM 369). I further note Kilbannon Church ruins were scoped out of the LVIA (Table 13-10). Given the no or limited theoretical visibility of the proposed wind turbines and the intervening distance, I am also satisfied that the proposed development will not give rise to significant cumulative visual effect on these national monuments.

Having regard to the above, I am satisfied that the applicant has carried out an assessment of the potential indirect effects of the proposed development on national monuments within the study area. Whilst I consider the applicant's descriptive assessment of indirect effects on setting including cumulative on national monuments to be lacking, overall, having carried out my own assessment, I am satisfied that the proposed development will not result in significant indirect effects including cumulative on national monuments.

10.14.7.2. **Recorded monuments and structures**

The observers raise concerns regarding the omission of features of archaeological or cultural importance including a children's burial ground located in Cloonascragh townland and known as Killaguhan and a ring fort. DAU and Galway County Council raised no concerns regarding impact on RMPs, and I have addressed the RMPs which are also national monuments in state care as raised by the OPW above. The applicant Response to Submission is noted.

In regard to the sites raised by observers, I am satisfied that these have been assessed in the EIAR. The children's burial ground located in the townland of

Cloonascragh (known as Killaguhan) is a recorded archaeological site, and forms part of a cluster of features (RMP refs. GA045-011; GA045 011001; GA045 011002) and are assessed in the EIAR under reference AH93. Of note, a children's burial ground at Cooloo (RMP ref GA045-015; GA045-015001, EIAR ref. AH86) is also located within the study area. The ringfort is noted by the applicant to correspond with a recorded archaeological site at Cloonascragh (RMP refs. GA045-012; GA045 012001) and is assessed in the EIAR under reference AH92. As above, the recorded features are not impacted by the footprint of the proposed development and the effects on setting of both RMPs are predicted to be of moderate significance due to the proximity of the proposed turbines.

I have reviewed the assessment of indirect effects within Appendix 14-2 on recorded archaeological sites. Having regard to the methodology in Section 14.2, and taking account of classification, location, access, distance to turbines and relevant plates in Appendix 14-1, I concur with the assessment that the magnitude of impact on recorded sites within 1km of the proposed turbines would be medium and not Significant. There is likely to be a noticeable change given proximity to proposed turbines, albeit there is the potential for views to be partially screened by intervening topography and vegetation, however the change would be long term reversible and would not lead to the loss of character or integrity of recorded sites. There is the potential for increased indirect effects on recorded sites located within 2km to 3km north of the proposed development due to proximity to two wind farm developments, depending on visibility, however these effects would at most be moderate and cumulative and not significant for the reasons outlined above.

Having regard to the location of these recorded sites and the methodology in Section 14.2 of the EIAR, I concur with the applicant that the magnitude of change to the setting would be medium and that the moderate residual effect arising would be Not significant.

Having regard to the above, I am satisfied that the proposed development will not result in significant direct or indirect effects including cumulative on recorded sites.

10.14.7.3. **Unrecorded archaeological and cultural heritage sites**

The observers raise concerns regarding the omission of features of archaeological or cultural importance including a children's burial ground located in the townland of Cloonahamper, a former hedge school, burial plots, old railway line and a famine road.

The Applicant's Response to Submissions states that the children's burial ground in the townland of Cloondahamper referred to by the observers does not appear in any cartographic sources or published registers. I note the applicant identifies a roughly circular anomaly from aerial photographs (c. 500 metres from T7). There would be no direct effects, and the applicant predicts indirect effects to be of moderate significance. Of note, children's burial grounds located at Cooloo and Cloonascragh (EIAR refs. AH86 and AH93, respectively) are considered in the previous section.

In response to the former hedge school referred to by the observers, the applicant notes that this disappeared from cartographic sources between the 1837 and 1892 OS maps and is not visible in aerial photography. The lands of the former hedge school are noted to be in private ownership (c. 900m from T7) and indirect effects arising from the proposed development would be negative and slight. No locational reference has been provided by observers for the monk's burial plot. The applicant notes that there is no reference to a monk's burial plot in public registers or cartographic sources.

In relation to a famine road at Cooloo Bog, the applicant identifies a track from aerial photography however, this track is not shown in cartographic sources, and it is not possible to determine its age. If this track were an unmarked famine road, the applicant states that the feature would have moderate sensitivity and effects arising from the proposed development would be indirect, negative and moderate. The applicant outlines that there is no old railway line at T9 shown on cartographic sources or published registers, and no evidence of this feature was identified during the site inspection. I concur with the applicant, taking account of mitigation measures, that significant direct effects are unlikely.

As summarised above, the proposed footprint of the development will result in direct permanent negative effects on four 'previously unidentified cultural heritage receptors' (CH14, CH 40, CH58, CH63). Plates of CH14 (stone wall and culvert), CH40 (vernacular building) and CH58 (drystone wall) are presented in Appendix 14-

1 whilst CH63 is noted to present a curvilinear anomaly which may be of anthropogenic or natural origin. Having regard to mitigation measures, I concur with the findings of the EIAR that the residual effect will not be significant.

Having regard to the above, I consider the baseline of unrecorded archaeological and cultural heritage sites within the EIAR to be comprehensive. I am satisfied, talking account of mitigation measures, that the proposed development will not result in significant direct or indirect effects on such sites and features.

10.14.7.4. **Unknown archaeological Features**

Observers raise concerns that undiscovered features and materials of archaeological importance will not be protected once construction has commenced at the site. Observers state that the bog is a community asset that is of archaeological value. As above, the potential for direct effects during construction phase on unknown archaeological features have been assessed by the applicant in the EIAR. The applicant's Response to Submissions (Section 3.3.2), the applicant considers that the mitigation measures within the EIAR and the CEMP, are sufficient to meet the requirements of DAU. I am, therefore, satisfied that effects from ground disturbance will be sufficiently mitigated and not significant.

10.14.8. **Conclusion: Direct and Indirect Effects**

I have considered the application details and all other documentation on file including the EIAR, and all the submissions and observations, and the applicant's responses. I am satisfied that potential direct effects on known and unknown archaeological features with the exception of the four previously unidentified sites have been avoided, and that direct effects on same will be managed and mitigated by the measures which form part of the proposed development, the proposed mitigation measures and through suitable conditions. I am satisfied that there is no potential for significant negative environmental indirect effects on the setting of archaeological sites and cultural heritage receptors. In reaching this conclusion I have had regard to the cumulative impact of the wind farms in the study area.

10.15. Material Assets (traffic and Transport)

Chapter 15 of the EIAR deals with material assets, including traffic and transport, telecommunication, aviation, utilities and waste. Supporting appendices comprise:

- Appendix 15-1 Traffinomics Traffic Count Data
- Appendix 15-2 Traffic Management Plan
- Appendix 15-3 Swept Path Analysis Pack
- Appendix 15-4 Telecoms Impact Assessment
- Appendix 15-5 Ai Bridges Letter of Reliance
- Appendix 15-6 Aviation Assessment Summary Report

10.15.1. Issues Raised

The submission made by TII provided recommendations in respect of the national road network. TII raised concerns in respect of potential impacts of the future grid connection on the N63.

The members of the Ballinasloe Municipal District raised concerns regarding impacts of the proposed development on local road infrastructure, and the suitability of the existing roads for transportation of heavy goods.

Several observers raise concerns in respect of impacts on the road network as a result of road closures and damage to road infrastructures. Issues are raised in respect of increased traffic and impacts on road safety. Concerns are raised regarding impacts on emergency services.

Observes raise issues regarding potential disruptions to telecoms, broadband and Bluetooth as a result of the proposed development. Concerns have been raised in respect of disruptions to private airfields and to airborne emergency services.

10.15.2. Context

The proposed turbine delivery route (TDR) of 45.5km runs from Galway Port to the subject site, shown in Figure 15-1a of the EIAR. The construction traffic haulage

route comprises the N63 and the R332, with alternative HGV routes on the M17, shown in Figure 15-2a of the EIAR.

Traffic counts were undertaken on Tuesday 8th July 2025 and are presented in Table 15-3 of the EIAR. Links assessed are:

- Link 1 – N63 (south of Annagh Cross)
- Link 2 – N63 (East of Annagh Cross)
- Link 3 – N63 (South of Brierfield)
- Link 4 – R332 (leading to the Proposed Wind Farm site).
- Section 15.2.4 of the EIAR lists the consultees contacting by the Applicant as part of EIAR scoping.

10.15.3. **Baseline**

Baseline is set out in Section 15.1.2, 15.2 and 15.3 of the EIAR.

Traffic and Transport: The N63 National Secondary Road runs in a southwest / northwest direction, approximately 1.3 km to the east south. The regional R332 travels southeast to northwest. A temporary construction access on the R332 is proposed (Figure 15-18), whilst operational access will be via an existing access of the R332. The priority junction between the N63 and the R332 is located southeast of the subject site, and a temporary run-over area to facilitate turbine delivery is proposed (see Section 3.0). The subject site crosses the local roads L6056 and L6301 (Figure 15-22, 15-24 & 15-25). There are no pedestrian facilities on the R332. Existing bus routes, Bus Eireann Service Nos 65 and 425, travel on the N63.

Refer to Section 3.7 above for a summary of abnormal load delivery route and haul route.

The GCR follows the public road for approximately 18.2km from the subject site to the Cloon 110kV substation (see Section 3.6 above). Potential diversion routes during construction phase, 8 no. sections are shown in Figure 16-6b of the EIAR.

Aviation interests: The subject site is located c. 26.6 km from Galway Airport, c. 25.9km from Craughwell Airfield and c. 46.5km from Ireland West Airport Knock.

Telecoms interests: Three Ireland Ltd. have a microwave link to the north of the subject site, and T07 is located approximately 11.4m from the 2nd Fresnel Zone of the Three Ireland link. ESB have Point to Multipoint radio links (4 nos.) crossing the subject site boundary to the north, closest turbines T06 and T07. RTE/2rn have no fixed links within a 5 km radius of the proposed development site.

Other material assets:

- Electricity: There are no 38kV or higher underground electricity cables on the wind farm subject site or along the GCR. An existing 220kV overhead line c. 1.3 km west of T07 and a 110 kV overhead line c. 2 km north of T07. The GCR passes under the 220kV overhead line in the townlands of Moyne and Newtown, Co. Galway.
- Gas: There are no gas mains or known water services within the subject site.
- Water: No known existing water services within the subject site, but the potential to encounter local water services are noted in the EIAR.
- Railway: GCR will cross over the Athenry to Tuam railway.
- Waste management: There are no EPA-licenced or authorised waste facilities or activities within the subject site. The closest, authorised municipal waste facility to the proposed development is located circa 27.4km southwest of the subject site in Oranmore, Co. Galway.

10.15.4. **Potential Effects**

Traffic: The construction phase of the Proposed Project is expected to last approximately 18-24 month, and traffic generation estimates are based on an 18 months construction period. Vehicles required for the Proposed Project as whole has been estimated. HGV vehicles are assumed to generate two trips, a single trip in and corresponding trip out. All traffic generated by the proposed development are assumed to be made via one route.

- Stage 1 (Site preparation, groundworks and cabling): Estimated 15,453 HGV loads over 341 working days. Includes estimated 2,940 HGV loads for GCR and 200 HGV loads for substation and BESS.

- Stage 1 (Concrete pour): Estimated 963 HGV loads. Turbine foundation to be poured one per day with c. 107 HGV trips per turbine over a 10-hour period.
- Stage 2 (Turbine construction): 36 trips by extended articulated trucks and 18 trips by standard large articulated HGVs, spread across 24 days over a 5 week period.
- Employees: Estimated 70 PCU movements (each trip is two way) added to the network during the groundworks stage (Stage 1), reducing to 45 PCU trips during the turbine construction stage (Stage 2).

Table 10.10: Summary of Potential Effects

Potential Direct, Indirect and Cumulative Effects
a) <u>Do Nothing:</u> • None.
b) <u>Construction:</u> • **Traffic:** Effects on the N63 and R332 will be negative, temporary and slight, Not Significant. - Phase 1 (9 days, concrete pour): Increases of between 6.5% to 11.8% on the N63 (Links 1 to 3). Increase of 30.4% on the R332 (Link 4). - Phase 1 (341 days): Increases of between 3.6% and 6.7% on the N63 (Links 1 to 3). Increase of 17% on the R332 (Link 4). - Phase 1 (GCR): Approximately 30 daily return HGV trips and 4 return trips by car.. - Phase 2 (turbine construction): Increases of between 1.2% and 2.1% on the N63 (Links 1 to 3) and 5.5% increase on the R332 (Link 4) from larger components. **I**ncreases of between 0.7% and 1.3% on the N63 (Links 1 to 3)**.** 3.3% increase on the R332 (Link 4) for smaller components. - N63/R322 Junction: The highest ratio of flow to capacity (RFC) will be 11.7% for the no development scenario, increasing to 12.0% with the inclusion of the

proposed construction traffic. A minor effect on the operation of the junction and junction forecasted to operate well within acceptable limit. • Service and Utilities: The Proposed Project has been designed to avoid underground electricity cables and other services. Short-term imperceptible negative effect, Not Significant.
c) <u>Operation</u>: • Traffic: Negligible/imperceptible. • Telecommunications: Potential for turbine blades to cause interference with the ESB and Three Ireland links that traverse the subject site. Long term, negative, **significant effect**. • Aviation: No effects. • Service and waste management: No effects.
d) <u>Decommissioning:</u> • Effects of decommissioning will be similar to those experienced during the construction phase, but to a lesser extent.
e) <u>Cumulative:</u> • Traffic: Considering permitted and proposed wind farms, Tuam Energy Park Solar Farm, Castlebar-Cloon 100 kV overhead, proposed quarry located in Ballyglunin. Effects at most, negative, short term and slight, Not Significant. • Telecommunications and aviation: No cumulative effects predicted. • Electricity Supply: **Significant positive** cumulative effect. • Built Services and Waste Management: Effect on built services and waste management: Short term imperceptible.

10.15.5. **Mitigation**

Notable measures include as follows:

- A detailed Traffic Management Plan (TMP) including measures detailed in Appendix 15-2. Key details of the TMP include: the appointment of a Traffic Management Coordinator and Contract Project Co-ordinator, a delivery programme, communication to locals, pre-and post- condition survey, traffic signs and flagman, and reinstatement works.
- Application to Galway County Council for a temporary reduction of the speed limit on part of the R328 to 60 km/h during the 18 month construction phase of the Proposed Project (Section 4 of Appendix 15-2).
- Preparation of a decommissioning plan, to be agreed with the local authority.
- Scheduling of works to avoid, where possible, cumulative effects with Cloonlusk Wind Farm and Cloon Substation works.
- Aviation: Aeronautical obstacle warning light scheme.
- Telecommunications: Relay the Three Ireland radio link between Cloonriddia and Moylough via an existing Telecoms Mast (i.e. Creevagh) and once-off installation of two microwave radio links.
- Telecommunications: The EIAR notes that Appendix 15-5 outlines technically viable mitigation measure to offset any potential impact on ESB Networks radio links.
- Telecommunications: Protocol agreement between the applicant and 2rn (RTE) to ensure mitigation in case of any unanticipated broadcast interference as a result of the Proposed Wind Farm.
- Measures outlined in CEMP (Appendix 4-2) and a Waste Management Plan.

10.15.6. **Residual Effects**

- Traffic: Residual effects as assessment above.
- Telecommunications: Long-term imperceptible neutral residual effect, Not Significant.
- Aviation: Long-term imperceptible neutral residual effect, Not Significant.
- Other material assets: Residual effects as assessment above

10.15.7. Analysis, Evaluation and Assessment: Direct and Indirect Effects

10.15.7.1. Traffic and Transportation

Robustness of Methodology

Observers raise concerns in respect of the accuracy of the traffic assessment because the baseline traffic surveys were undertaken during school holidays, the construction phase traffic is underestimated, references are made to a closed quarry, and the assessments refer to the wrong road.

I note the applicant's Response to Submissions confirms that the traffic counts and assessments were undertaken in accordance with best practice guidance, including the TTA Guidelines. I note the applicant's response regarding traffic counts during school holidays and that rural areas are not expected to similar school related traffic peaks ton urban areas and that the TII Automatic Count was used to assess seasonal variations. I am satisfied that the baseline traffic counts give an adequate representation of the background traffic environment. As above, the EIAR has assumed that all construction traffic will travel the same route. The number of trips generate are set out in Table 15-8 to 15-13 in the EIAR and are based on material and truck capacity. I consider this acceptable.

Whilst I note the reference by an observer that a quarry at Ballyglunin is no longer operational, I am satisfied that this does not alter the traffic assessment which assumes, providing a worst case scenario, that all construction traffic will travel along the same haul route as described in Section 3.7 above.

I note the applicant's Response to Submissions acknowledges the error in referencing the R328 instead of the R332 within the TMP, and I am satisfied that this does not undermine the assessment or the mitigation measures and has been corrected by the applicant in the Response to Submissions. Furthermore, mitigation measure MM128 requires the submission of a detailed TMP.

Road Network Capacity and Design

Observers raise concerns that construction phase traffic using the R332 and will negatively affect local access to dwellings, farms, schools and playgrounds, and will impact on the school bus route, access for emergency services and the length of

diversion routes. Both observers and Elected Members raise concerns in respect of the potential for construction phase traffic to damage local roads infrastructure. Galway Council Roads Department has raised concerns regarding the carrying capacity of alternative traffic diversions to support such extensive road closures. TII have raised concerns regarding closure and impacts on the N63. Several observers also raise concerns that application documentation is not accompanied by road safety audits or traffic impact assessments.

As above, the assessment has assumed, as a worst case scenario, that all construction traffic travels along the same route to and from the subject site via the N63 and the R332. I note that the proposed construction route does not pass through Barnaderg or Brierfield and does not pass by any of the local schools. Having reviewed the predicted traffic volumes and forecasted background traffic condition, I note the increase in traffic along the N63 are below 10% for all phases and exceeding 10% along the R332 during phase 1 works. The EIAR demonstrates that the R332 (Link 4) operates well within link capacity. The N63/R332 junction capacity test shows that the junction with the Proposed Project is forecasted to operate well within acceptable limit. The forecast for N63 (Link 1- south of Annagh Cross) is that by 2028 this will operate above link capacity both without and with the construction traffic associated with the Proposed Project.

Having regard to the above, I am satisfied that the capacity of the existing road network to accommodate estimated construction traffic volumes has been adequately demonstrated within the EIAR. I consider the 30.4% increase in traffic flows on the short section of the R332 during the 9 days of concrete pour to be short term, negative and Significant. All other temporary increases in traffic flows on the N63 and the R332, considering background traffic levels and mitigation measures, are considered negative and not Significant. Whilst the potential for indirect effects may arise as a result of local road users diverting through the Barnaderg or Brierfield settlements, however, given the low baseline levels of traffic in the area, I do not consider that these settlements will experience significant traffic effects. Whilst concerns by observers regarding road width are noted, this is a regional road with HGV traffic already accommodated along it.

I am satisfied that construction traffic will comprise of standard HGVs, trucks and cement mixers which are all vehicles currently in use on the local road network and the anticipated vehicles and loads are all within the acceptable national limits. The applicant has confirmed in the Response to Submissions that turbine delivery vehicles are also within acceptable national limits. As above, mitigation measures include for pre- and post-construction road condition surveys. The Commission will note that Galway County Council has recommended a transportation bond to account for any damage to local roads.

I note swept path analysis has been carried out for TDRs and temporary accommodating works. Works identified consisting mainly of minor works within the public road and road verge except for the identified overrun area at the N63/R332 junction and at the temporary construction junction on R332. Abnormal turbine delivery loads will be carried out during off-peak and/or night time hours and under Garda escort. TII's reinstatement requirements for the N63/R332 junction overrun area is noted as well as the request for the applicant to consult with all PPP Companies, MMaRC Contractors and road authorities prior to undertaking works affecting the national road network.

I have reviewed the diversion routes identified for the GCR and note that these are local roads with low background traffic levels. I further note a number of additional local roads which can provide diversion if so required. The main impacts will be if national or regional roads are closed and traffic are diverted onto local roads. TII's concerns relating to a closure of the N63 is noted. As outlined in the TMP, the applicant's Response to Submissions Confirms that the closure of the N63 is precautionary. Given the road widths of the N63, R332 and R347 and the limited footprint of the trenching works, I would anticipate that a stop-go system would be more appropriate for these sections of the GCR. I note the closure of roads will be subject to agreement with Local Authority and TII. AS per the TMP, the GCR works will be transient moving along at approximately 100m per day and local access will be facilitated throughout these works and local residents kept up to date (MM45 and MM123). For traffic travelling through the area, I consider it likely that alternative diversions will be used to avoid road closures. Whilst the Roads Department's concerns are noted, I am satisfied that localised short term diversion of traffic will not result in significant capacity impacts on the local road network.

Conclusion: Therefore, I am satisfied, taking account of mitigation measures, that the applicant has satisfactorily demonstrated adequate capacity in the road network to accommodate the volume and the frequency of construction traffic generated by the Proposed Project. As per mitigation measures proposed, the applicant will be carrying out both pre- and post-road condition surveys which will provide a degree of condition oversight and a mechanism for roads repair/resurfacing works where required. Any works to the road network including the N63 will be undertaken in accordance with Local Authority and TII specifications.

Site Entrance

The Roads Department of Galway County Council states that the proposed development would endanger public safety by reason of traffic hazard as the visibility requirements under DN-GEO-03060 (May 2023) has not been met. Several observers also raise concerns that application documentation is not accompanied by road safety audits.

I note the proposed temporary construction access is located on a straight section of the R332 with broken white lines to the front. The proposed TDR overrun area is located to the curve in the road to the south and fronted by a solid white line. The proposed temporary access is located on the R332 and an 80kph speed limit is noted to be in place. I further note the number of existing entrances which will inform drivers expectations along this section of the R332. The required 160m visibility splay from a 3m setback is noted to be available in the TMP (Figure 15-18 and Appendix 15-2). The full forward 160m forward visibility for traffic approaching from the east to observe a vehicle waiting to turn right into the subject site is noted to be constrained by bush/shrub and by removal of bush/shrub a forward visibility of 140m can be achieved. I note from the TII publication (DN-GEO-03031, May 2023), as referred to by the Roads Department, that this is short of the ‘desirable minimum stopping sight distance’ of 160m for 85kph design speed but exceeds the ‘one step below desirable minimum’ which is 120m. I further note the desirable minimum stopping sight distance’ of 120m for 70kph design speed. I note as per Section 1.3 of the TII publication (DN-GEO-03031, May 2023), that the “standard shall be used for the design of junction layouts on all new or improved national roads” and

“provides guidance on junction and access layouts on regional and local roads which form part of a national road scheme.”

The applicant as per the TMP, proposes to seek a reduction in speed limit on this stretch of the R332 to 60 kph for the duration of the construction period and that the required 90m forward visibility can be achieved. The TMP outlines additional temporary measures in accordance with the Traffic Signs Manual (Section 8) and the provision of a flagman at the junction at all times. The areas of vegetation to be trimmed have been included in the application boundary. It is further noted that the junction will be closed following completion of the construction phase. The operational access will be via an existing access along the R332.

I note no concerns have been raised by the Roads Department with regard to the temporary TDR overrun area at the N63/R332 junction. The EIAR sets out that works associated with the overrun will be carried out from the R332 and no impact on the N63 are anticipated. Requirements by the TII as noted summarised in Section 4.3 area applicable.

The EIAR outlines that a Road Safety Audit was not required and was therefore not undertaken. Having reviewed the TII publication, Road Safety Guidelines (GE-STY-01027, May 2025), I note that the intended use of these is for road schemes which result in new road construction or permanent change to the existing road or roadside layout. In this regard, I note the Proposed Project will result in a temporary access track and junction and temporary overrun area which will be subject to restricted and supervised use during the construction phase. I note the TII has not requested a Road Safety Audit in their submission. The applicant, however, commits to carrying one out for the proposed temporary access on the R332 and the temporary overrun area at the N63/R332 junction at detailed design stage in the Response to Submissions should this be required.

Having regard to the above, and taken account of the temporary and managed nature of the proposed site entrance, driver expectations along this section of R332 and mitigation measures including speed reduction and traffic signs, I am satisfied that the applicant has sufficiently demonstrated that adequate setback, sightlines and forward visibility can be achieved in accordance with relevant guidance. I further note from my review of the proposed site entrance and given the length of

internal access road for the subject site, that it is unlikely to result to lead to queuing and tailbacks on the R332.

Road safety and obstruction of road users

Observers raise concerns that traffic from the proposed development will impact on those currently walking, running and cycling on the roads, both for transport and for recreational purposes. Concerns are raised in respect of pedestrian safety during the construction phase. As above, the Roads Department states that the proposed development would endanger public safety by reason of traffic hazard as the visibility requirements under DN-GEO-03060 (May 2023) has not been met.

As outlined above, I am satisfied that the applicant has satisfactory demonstrated the adequacy of the capacity and design of the local road network to accommodate the construction traffic. I have considered the design of the temporary site entrance above, and taken account of mitigation measures, found it to be in accordance with applicable design standard. I note the routing of the construction traffic is via the R322 and the N63 in proximity to the subject site and with limited impact on the local roads crossed by the subject site. I note the immediate local road network mainly facilitates local access to farms, residential properties and businesses with very low background traffic levels. There are no existing pedestrian or cycling facilities along these sections of the R332 or the N63. There are grass verges along both sides of the R332 except where existing development provides temporary setbacks. I noted no pedestrian or cycle activity along both roads during my sites visits. As noted above, the construction route avoids the local settlements and the local schools. In addition, the TMP proposes a reduced speed limit along the R332 and local access is to maintain. Abnormal loads will take place during night time and under Garda escort.

Having regard to the above, I am satisfied that any pedestrian severance, delay, amenity, fear and intimidation effects as a result of the Proposed Project would temporary, slight and adverse and not significant. I am, therefore, satisfied that the road safety matters have been considered and that the proposed development, take account of mitigation measures detailed in the Traffic Management Plan, will not result in any undue obstruction of road users.

Lack of Detail in the TMP

Observers raise concerns regarding the lack of information in the TMP and state the crucial details of the proposed development are being deferred to the post-consent phase. I note the necessary quantitative data in respect of trips generation are provided in Chapter 15 of the EIAR. Furthermore, a final full TMP will have to be agreed with the Roads Authorities and the Gardai prior to the construction phase of development as per mitigation measures MM123 Chapter 18.

Cumulative Impacts with Planned Infrastructure Works

Submission by Elected Members state that the proposed development should be considered with reference to the Transport and Planning Study, which forms Appendix 3 of the County Development Plan. Having reviewed the study, I note that the document is largely strategic in nature and does not provide site specific guidance or make any reference to new wind farm development. None of the measures or works referred to in study relate to parts of the road that will be utilised during the construction phase of the proposed development.

As set out in the EIAR, the assessment of the Proposed Project has assumed that the N63 Liss to Abbey Realignment Scheme (Ref. ABP-312877-22) will be in place prior to the construction of the proposed development. The N63 Abbeyknockmoy Village Active Travel, a Part 8 scheme approved in April 2024, has not been considered in the EIAR and is noted to include a shared cycle and pedestrian lane dn a raised footpath along a section of the N63. Given these works tie in with the realignment scheme, it is reasonable to assume that this will be in place prior to the construction of the Proposed Project. Alternatively, I am, satisfied that the proposed construction phase can be scheduled to avoid overlap with the works to the N63 on account of measures detailed within the TMP.

10.15.7.2. **Other material assets**

Telecommunication

Several observers raise concerns regarding potential disruptions to telecoms, broadband and Bluetooth as a result of the proposed development, and on emergency services communications.

Turbine T07 is noted to have been microsite during the design process to reduce impact on ESB Links. This mircositing brought the turbines within the requested buffer zone of the Three Ireland link. As above, in the event of potential impact on the Three Ireland link, the EIAR identifies mitigation measures to be implemented in advance of construction. Mitigation measures to address potential impacts on the ESB networks links are also outlined in Appendix 15-5. I consider the applicant has sufficiently demonstrated that potential impacts on telecommunication links can be mitigated.

The applicants' Response to Submissions confirms that ComReg and TETRA were consulted during the scoping phase of the EIAR. TETRA confirmed that "We anticipate no impact from the development as proposed" (EIAR Appendix 2-1). On the basis that no potential issues were raised by the operator, I do not consider that the proposed development will have significant effects on emergency service communications.

Aviation

Concerns are raised regarding the impacts of the proposed wind turbines on the air ambulance that regularly transects the subject site and the potential interference with the optimal approach paths for helicopters approaching a private helipad. I have reviewed EU REG 923/2012 and note the minimum flight heights for Visual Flight Rules (VFR) as specified in SERA.5005(f) are applicable. Applicable to the subject site, is a minimum VFR flight height of "150 m (500 ft) above the ground or water, or 150 m (500 ft) above the highest obstacle within a radius of 150 m (500 ft) from the aircraft". Corresponding to this, is the requirement for an obstacle exceeding 150m (~500ft) in height to be lit and as noted above, this has been requested by both IAA and Department of Defence in their submissions summarised in Section 4.3 above. I am, therefore, satisfied that the proposed development will not result in adverse effects on aviation interests subject to conditions which include aeronautical warning lights and as-constructed turbine coordinates.

Utilities

I note the development has been designed to avoid all underground and overhead electricity cables and other utilities and services and that the GCR will be subject to

a Road Opening Licence. It is therefore considered that that the Proposed Project is not likely to cause disruptions to utilities and service supplies.

Whilst I note the conclusions of the EIAR, I do not consider that the Proposed Project with existing and permitted wind farm developments will have a significant positive cumulative effect on electricity supply.

Waste

Whilst the concerns raised in submissions regarding the lack of recycling options for wind turbine are noted, I am satisfied that the majority of a wind turbine can be recycled using standard waste management practices and that circular solutions for repurposing decommissioned turbine blades are being advanced within Ireland and across Europe. All aspects of waste management will be covered by the Waste Management Plan as referenced in the CEMP, Appendix D (EIAR, Appendix 4-5).

10.15.8. **Conclusion: Direct and Indirect Effects**

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observations received. I am satisfied that potential effects on material assets as a result of the Proposed Project would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. The main significant direct effects on traffic and transport are the short term, temporary HGV traffic increase on the R332 during turbine foundation concrete pours which will be mitigated by traffic management measures outlined in the TMP.

In reaching this conclusion, I have had regard to the cumulative impact of the wind farms and other relevant projects in the study area.

10.16. Major Accidents

Chapter 16 of the applicant's EIAR deals with major accidents.

Observations have raised concerns regarding the risk of major accidents from peat slide and flooding. Concerns regarding fire, ice throw, blade throw, mechanical failure and turbines collapsing have been raised.

Of note, peat stability, water contamination and impact on aviation have been considered as part of EIAR Chapters 8, 9 and 15 above, respectively.

Chapter 16 of the EIAR sets out that the Proposed Project has low potential to cause natural disasters or major accidents given the stable geology and mild climate of Ireland. It notes that a wind farm is not a recognises source of pollution. The subject site is note close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations.

Chapter 16 sets out a risk assessment to establish the likelihood and effect of any major accident or natural disaster has been provided and the assessment assumes that all proposed mitigation measures within the EIAR has failed. Whilst I note concerns raised by observers, I am satisfied that the risk assessment carried out is in accordance with the EIA Directive and EPA Guidelines (2022) and the risk matrix is sourced from the DoEHLG Guide to Risk Assessment in Major Emergency Management. The assessment considers potential risk including critical infrastructure emergencies, severe weather, flooding, landslide/peat stability, utility emergencies, traffic incident, contamination, fire/ gas explosion and collapse / damage to structures. The highest risks relevant to the proposed development during construction, operation and decommissioning were identified as 'Contamination' and 'Fire / Gas Explosion' (Table 16.8). Overall, the assessment finds that the risk of a major accident and/or disaster during all development phases is low and taking account of mitigation measures, there will be no significant residual effects associated with construction, operation and decommissioning.

In regard to fire / explosion risk, I note the Proposed Project have been considered and that this includes the substation and BESS compound. I concur with the applicant's risk score which is based on a likelihood ranging from 'Extremely Unlikely' at operation and decommissioning to 'Very Unlikely' at construction stages and a consequence rating of 'Limited' for all development phases. It is noted that the Proposed Project will be designed, built and operated in accordance with best practice and will be subject to a fire safety risk assessment and a detailed CEMP.

Flood risk is addressed in Section 10.9 above, and I am satisfied that, subject to appropriate mitigation, the Proposed Project is not itself at risk of flooding and is not expected to have any adverse impact on flood risk. Impacts on water quality are

also considered in Section 10.9. It is considered that the connection between karst and hydrogeology within the subject site has not been adequately assessed and, therefore, the effectiveness of mitigation measures in protection water quality has not been demonstrated. Furthermore, the gap in knowledge of the characteristics, specifically hydrology and hydrogeology, of the deeper areas of raised bog, and where infrastructure is proposed including floating tracks and cabling, represents risks with regard to the potential implications on the wider peatland context and protection of water quality. As previously, the risk from fire water associated with the BESS has not been assessed in the EIAR (See Section 10.9).

In Section 10.8 above, I have considered the geotechnical risk associated with karst and I am satisfied, taking account of mitigation measures, that the risk is low. I have also considered peat instability in detail, and I am not satisfied that the risk of peat instability in terms of the risk of bog burst has been considered adequately where the footprint of the proposed development overlaps deeper areas of peat.

The Commission will note concerns regarding ice throw, taking account of distance to receptors, no public access proposed, remote monitoring, climate and the 2006 Guidelines and the Draft 2019 Guidelines which outlines that the build-up of ice on turbine blades is unlikely to present problems, I am satisfied that the potential hazard is low.

Having regard to the above and methodology set out in Section 16.2.4 for the risk assessment, and taking a precautionary approach on account of my conclusions in Section 10.8, I consider the likelihood of a potential peat stability risk or contamination risk occurring during construction would increase from ‘Extremely unlikely’ and ‘Very Unlikely’ to ‘Unlikely’. Considering the ‘classification of impact’, I do not consider the consequences of the risk occurring will change and remains ‘Limited’. On that basis, the risk score increases from 2 to 6 for peat instability and 4 to 6 for contamination during construction, however as per the risk matrix both remain a ‘low’ risk scenario.

10.16.1. **Conclusion: Direct and Indirect Effects**

Having regard to the above, I concur with the applicant’s conclusion that the risk of a major accident and/or disaster during all development phases is low. However, I

am not satisfied, as per my conclusion in Section 10.8 above, that the effectiveness of measures to avoid, prevent or mitigate likely significant adverse effects on the environment as a result of such events have been adequately demonstrated.

10.17. Interactions

Chapter 17 of the applicant's EIAR deals with interactions.

Chapter 17 details the interactions between the environmental topics, and Table 17.1 provides the matrix outlining potential interactions. A summary of the main interactions is provided in Section 17.2 and outlines that potential negative impacts, where identified, have been avoided or reduced by design and the proposed mitigation measures detailed in Chapter 5 to 15 of the EIAR. No adverse significant effects on the environment with respect to the various environmental factors and their interactions are predicted. Positive interactions are noted to arise between Population and Human Health and Air and Climate, due to the offset of greenhouse gas emissions provided a net positive effect on the climate.

10.17.1. Conclusion

I consider that the interactions capture the construction and operation impacts between the EIAR topics. However, I conclude at sections 10.6 to 10.9 above that significant effects in relation to the environmental factors of biodiversity, geology and water cannot be ruled out and that mitigation measures to prevent / reduce significant effect have not been proven to be effective. The potential for water pollution to give rise to significant negative effects on health of other users of that water within the same catchment cannot be ruled out.

Having regard to the foregoing, I consider that significant effects in relation to interactions cannot be avoided, managed or mitigated by the measures contained within the EIAR or by the information provided in the applicant's Response to Submissions. As noted previously, further information subsequent to the receipt of the applicant's Response to Submission has not been sought, owing to time constraints for decision-making relating to REDIII Directive.

10.18. **Reasoned Conclusions**

Having regard to the examination of environmental information set out above, to the EIAR and other information provided by the developer, and to the submissions from the planning authority, prescribed bodies and observations in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment with the implementation of the proposed mitigation measures are as follows:

- In respect of **Population & Human Health**, there is the potential for temporary indirect Significant negative effects during the construction phase by way of water supply.
- In respect of **Biodiversity**, there is a potential for significant effects on internationally important aquatic habitats and species as a result of works at watercourse crossings and increased peat groundwater flows and drainage. There is the potential for significant direct and indirect effects from the construction of floated access tracks on raised bog (Annex 1 habitat) and to the disruption of groundwater flow feeding the groundwater dependent terrestrial ecosystem**.** Active raised bog is a priority habitat listed on Annex I of the EU habitats directive, it has been concluded that on the basis of the information submitted there is insufficient evidence to support a robust independent appraisal of the conservation value of the raised bog habitat and the likely implications of the proposed development for peatland ecology and bog restoration.
- In respect of **birds**, there is the potential for Significant collision risk effects on the wintering golden plover at a national scale. Efficacy of mitigation measures cannot be verified.
- In respect of **land, soil, water**, there is a potential for significant effects on surface water and groundwater quality to arise during the construction and operational phases. There insufficient information submitted to demonstrate the characteristics and strength of in situ deeper peat to support the floating access tracks. There is insufficient information submitted to rule out

groundwater pathways between subject site, the Proposed Project and sensitive groundwater. Efficacy of mitigation measures cannot be verified.

- In respect of **Noise** and **Climate**, potential for significant operational noise effects on a sensitive receptor located in proximity to proposed turbine T5 and which has not been identified in the EIAR. Potential for significant cumulative positive effect, due to the displacement of CO_2 from the atmosphere arising from fossil fuel energy production.
- In respect of **Landscape and Visual**, the placement of significant structures within the local landscape will, within 3km of the proposed turbines, result in significant landscape effects and in significant visual effects on a small number of residential receptors where primary and open views towards the proposed turbines will be experienced.
- In respect of **Material Assets**, potential for short term significant negative effects on the road network during the days of turbine foundation concrete pours.

11.0 Appropriate Assessment

11.1. Introduction

11.1.1. The requirements of Article 6(3) as related to Appropriate Assessment (AA) of a project under part XAB, section 177U of the Planning and Development Act 2000 (as amended) are considered fully in this section and Appendix 1 Appropriate Assessment Stage 1 Screening Determination and Appendix 2 Appropriate Assessment Stage 2. Refer to Section 1.0 to 3.0 of this report for Background, Site Location and Description and Proposed Development.

11.2. Screening Determination

My Appropriate Assessment Stage 1 Screening Determination is set out in Appendix B.1, where I conclude as follows:

In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in the AA screening, it is

not possible to exclude the possibility that proposed development alone would result significant effects on Lough Corrib SAC (Site code: 000297); River Suck Callows SPA (Site code: 004097) and Lough Corrib SPA (Site code: 004042) in view of the sites conservation objectives. It is therefore determined that an appropriate assessment of the proposed development is required on the basis of the possible effects of the project 'alone'.

Further assessment in-combination with other plans and projects is therefore not required at screening stage.

11.3. Appropriate Assessment Conclusion

11.3.1. My Appropriate Assessment (Stage 2) is set out in Appendix B.2, where I conclude as follows:

In screening the need for Appropriate Assessment, it was determined that the proposed development could result in significant effects on Lough Corrib SAC (Site code: 000297), River Suck Callows SPA (Site code: 004097) and Lough Corrib SPA (Site code: 004042) in view of the conservation objectives of those sites and that Appropriate Assessment under the provisions of S177U was required.

Following an examination, analysis and evaluation of the NIS, all associated material submitted, response to submissions, and taking into account submissions by prescribed bodies and observers and the report of specialist consultant on hydrogeology, it is considered:

- With respect to River Suck Callows SPA (Site code: 004097), that adverse effects on site integrity can be excluded in view of the conservation objectives of this site and that no reasonable scientific doubt remains as to the absence of such effects.
- With respect to Lough Corrib SPA (Site code: 004042), that adverse effects on site integrity can be excluded in view of the conservation objectives of this site and that no reasonable scientific doubt remains as to the absence of such effects.
- With respect to the Lough Corrib SAC, that adverse effects on the site integrity of Lough Corrib SAC (Site code: 000297) cannot be excluded in

view of the conservation objectives of this site and that reasonable scientific doubt remains as to the absence of such effects. This conclusion is based on the following:

- Insufficient information submitted to rule out pollution risk via groundwater pathways to sensitive surface water and groundwater receptors. Efficacy of mitigation measures cannot be verified.
- Insufficient evidence in the design and mitigation of surface water management that groundwater related risks have been accounted for.
- Insufficient evidence in the design and mitigation of works proposed within stream channels at watercourse crossings.
- Insufficient evidence has been presented on the impact from floating tracks on water flow and retention within peat habitat adjacent to water courses, and the potential increased generation of Dissolved Organic Carbon (DOC) in runoff.
- Insufficient evidence to demonstrate that the characteristics and strength of in situ peat adjacent to water courses can support the floating access tracks in terms of peat stability risks.

12.0 Recommendation

Having regard to the foregoing, I recommend that permission for the proposed development be **refused** for the following reasons.

13.0 Reasons and Considerations (Draft Order)

The Commission reached its decision in accordance with its duties under Section 15(1) of the Climate Action and Low Carbon Development Act 2015, as amended, and the requirement to, in so far as practicable, perform its functions in a manner consistent with inter alia the Climate Action Plan 2025 and the furtherance of the national climate objective.

And in coming to its decision, the Commission had regard to the following:

- **European** legislation, including of particular relevance:

- Directive 92/43/EEC (Habitats Directive) and Directive 79/409/EEC as amended by 2009/147/EC (Birds Directive) which set the requirements for Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union.
- EU Renewable Energy Directive 2009/28/EC which aims to promote the use of renewable energy and amending Directive EU/2023/2413 which aims to speed up the EU's clean energy transition as implemented by European Union (Planning and Development) (Renewable Energy) Regulations 2025 (S.I. 274 of 2025)
- Directive 2011/92/EU (The EIA Directive) as amended by Directive 2014/52/EU as implemented by Article 94 and Schedule 6 (paragraphs 1 and 2) of the Planning Regulations as amended.
- Directive 2000/60/EC (The Water Framework Directive), and the requirement to exercise its functions in a manner which is consistent with the provisions of the directive and which achieves or promotes compliance with the requirements of the directive.

- **National** planning and related policy, including:
  - National policy with regard to the development of alternative and indigenous energy sources and minimisation of emissions from greenhouse gases, particularly the National Planning Framework First Revision (2025) and National Policy Objective 70.
  - Wind Energy Guidelines: Guidelines for Planning Authorities 2006 and the draft guidelines published in 2019.
  - The objectives and targets of the National Biodiversity Action Plan 2023-2030.
- **Regional and local** planning policy, including:
  - Regional Spatial and Economic Strategy for the Northern and Western Region 2020-2030;
  - Galway County Development Plan 2022-2028.
- Other relevant national policy and guidance documents.

- The nature, scale and design of the proposed development as set out in the planning application and the pattern of development in the vicinity.
- The likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European sites.
- The entirety of the documentation submitted by the applicant in support of the proposed development, including the Environmental Impact Assessment Report, the Natura Impact Statement and the response to submissions made in February 2026,
- The submissions and observations made in connection with the planning application.
- The report and the recommendation of the Inspector, including the examination, analysis and evaluation undertaken in relation to appropriate assessment and environmental impact assessment, as well as the external specialist consultant report on hydrogeology for the Commission relating to the same.

13.1. Appropriate Assessment

Appropriate Assessment Stage 1 Screening Determination

In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in the AA screening, it is not possible to exclude the possibility that proposed development alone would result significant effects on Lough Corrib SAC (Site code: 000297); River Suck Callows SPA (Site code: 004097) and Lough Corrib SPA (Site code: 004042) in view of the sites conservation objectives. It is therefore determined that an appropriate assessment of the proposed development is required on the basis of the possible effects of the project ‘alone’.

It is therefore determined that Appropriate Assessment of the proposed development is required on the basis of the possible effects of the project ‘alone’.

Further assessment in-combination with other plans and projects is therefore not required at screening stage.

Appropriate Assessment Stage 2 Conclusion

In screening the need for Appropriate Assessment, it was determined that the proposed development could result in significant effects on Lough Corrib SAC (Site code: 000297), River Suck Callows SPA (Site code: 004097) and Lough Corrib SPA (Site code: 004042) in view of the conservation objectives of those sites and that Appropriate Assessment under the provisions of S177U was required.

Following an examination, analysis and evaluation of the NIS, all associated material submitted, response to submissions, and taking into account submissions by prescribed bodies and observers and the report of specialist consultant on hydrogeology, it is considered:

- With respect to River Suck Callows SPA (Site code: 004097), that adverse effects on site integrity can be excluded in view of the conservation objectives of this site and that no reasonable scientific doubt remains as to the absence of such effects.
- With respect to Lough Corrib SPA (Site code: 004042), that adverse effects on site integrity can be excluded in view of the conservation objectives of this site and that no reasonable scientific doubt remains as to the absence of such effects.
- With respect to the Lough Corrib SAC, that adverse effects on the site integrity of Lough Corrib SAC (Site code: 000297) cannot be excluded in view of the conservation objectives of this site and that reasonable scientific doubt remains as to the absence of such effects. This conclusion is based on the following:
    - Insufficient information submitted to rule out pollution risk via groundwater pathways to sensitive surface water and groundwater receptors. Efficacy of mitigation measures cannot be verified.
    - Insufficient evidence in the design and mitigation of surface water management that groundwater related risks have been accounted for.

- Insufficient evidence in the design and mitigation of works proposed within stream channels at watercourse crossings.
- Insufficient evidence has been presented on the impact from floating tracks on water flow and retention within peat habitat adjacent to water courses, and the potential increased generation of Dissolved Organic Carbon (DOC) in runoff.
- Insufficient evidence to demonstrate that the characteristics and strength of in situ peat adjacent to water courses can support the floating access tracks in terms of peat stability risks.

13.2. Environmental Impact Assessment: Reasoned Conclusion

The Commission completed an environmental impact assessment in relation to the proposed development and concluded that, notwithstanding the implementation of the mitigation measures proposed as set out in the Environmental Impact Assessment Report, the proposed development would be likely to have significant effects on the environment, by itself and in combination with other plans and projects in the vicinity, and that such effects would not be acceptable. In doing so, the Commission adopted the report and conclusions of the Inspector that the main significant direct and indirect effects of the proposed development on the environment with the implementation of the proposed mitigation measures are as follows:

- In respect of **Population & Human Health**, there is the potential for temporary indirect Significant negative effects during the construction phase by way of water supply.
- In respect of **Biodiversity**, there is a potential for significant effects on internationally important aquatic habitats and species as a result of works at watercourse crossings and increased peat groundwater flows and drainage. There is the potential for significant direct and indirect effects from the construction of floated access tracks on raised bog (Annex 1 habitat) and to the disruption of groundwater flow feeding the groundwater dependent terrestrial ecosystem**.** Active raised bog is a priority habitat listed on Annex I

of the EU habitats directive, it has been concluded that on the basis of the information submitted there is insufficient evidence to support a robust independent appraisal of the conservation value of the raised bog habitat and the likely implications of the proposed development for peatland ecology and bog restoration.

- In respect of **birds**, there is the potential for Significant collision risk effects on the wintering golden plover at a national scale. Efficacy of mitigation measures cannot be verified.
- In respect of **land, soil, water**, there is a potential for significant effects on surface water and groundwater quality to arise during the construction and operational phases. There insufficient information submitted to demonstrate the characteristics and strength of in situ deeper peat to support the floating access tracks. There is insufficient information submitted to rule out groundwater pathways between subject site, the Proposed Project and sensitive groundwater. Efficacy of mitigation measures cannot be verified.
- In respect of **Noise** and **Climate**, potential for significant operational noise effects on a sensitive receptor located in proximity to proposed turbine T5 and which has not been identified in the EIAR. Potential for significant cumulative positive effect, due to the displacement of CO_2 from the atmosphere arising from fossil fuel energy production.
- In respect of **Landscape and Visual**, the placement of significant structures within the local landscape will, within 3km of the proposed turbines, result in significant landscape effects and in significant visual effects on a small number of residential receptors where primary and open views towards the proposed turbines will be experienced.
- In respect of **Material Assets**, potential for short term significant negative effects on the road network during the days of turbine foundation concrete pours.

13.3. **Proper Planning and Sustainable Development**

The Commission, in performing its functions in a manner consistent with the applicable climate objectives as set out in Section 15 of the Climate Action and Low Carbon Development Act, 2015 as amended, considers that while the principle of a renewable energy development on this subject site is supported by National, Regional and local policy there are specific and significant technical information deficits and difficulties with the assessments undertaken in respect of the proposed development. In this particular circumstance;

1. The proposed development includes the construction of floated access track across an area of uncut raised bog, which will result in the loss of and in the disruption to groundwater flow feeding the groundwater dependent terrestrial ecosystem. Having regard to uncut raised bog being a priority habitat listed on Annex I of the EU Habitats Directive, and the limitations of the investigations and assessment carried out on hydrogeological conditions and the value of ecological habitat pertaining on subject site and on the adjoining land, the Commission is not satisfied that the applicant has demonstrated that the proposed development would not result in a significant loss of, or have a significant adverse effect on Cooloo Bog and on peatland ecology and restoration. The proposed development would, therefore, be contrary to objectives of the National Biodiversity Action Plan 2023-2030, the policy objectives of the Galway County Development Plan 2022-2028, specifically WTWF1 and NHB1, and contrary to the proper planning and sustainable development of the area.
2. Having regard to the sensitivity of the surface water and groundwater receptors at a local and regional setting, and the potential pathways between the subject site and the proposed development to these receptors, and the deficit in evidence based information submitted on the connectivity to the karst below, the characteristic of the peat within the subject site and the inconsistencies in the description of the proposed development, the Commission is not satisfied that the application has adequately identified, evaluated and mitigated that the proposed development would not result in unacceptable impact on surface water and groundwater pollution risks. The

proposed development would, therefore, be contrary to the objectives of the Galway County Development Plan 2022-2028, specifically policy objective WS7, and contrary to the proper planning and sustainable development of the area.

3. Having regard to information provided, and in particular the location of the prosed development within waterbodies under the Water Framework Directive, which status are 'good', and which are also designated as a ‘protected area’ and as a Natura 2000 Site, the Lough Corrib SAC, and which therefore are protected by statutory objectives, the Commission is not satisfied that the proposed development is consistent with achieving those environmental objectives. The proposed development would therefore be contrary to the requirements of Article 4 of the EU Water Framework Directive (2000/60/EC), as transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003), as amended, and would be inconsistent with the objectives of the Water Action Plan 2024 and the proper planning and sustainable development of the area.
4. Having regard to the information provided with the application, including the Natura Impact Statement, the Commission considers that reasonable scientific doubt remains as to the implications for the proposed development on site integrity for the Lough Corrib SAC (Site Code 000297) specifically, it is considered that adverse effects on water-dependent species of qualifying interests from water degradation cannot be excluded beyond reasonable scientific doubt in view of the conservation objectives to restore or maintain favourable conservation condition. The Commission cannot be satisfied beyond reasonable scientific doubt that the proposed development, individually, would not adversely affect the integrity of Lough Corrib SAC (Site Code 000297) in view of the Site's conservation objectives and qualifying interests.

The Commission is satisfied that a refusal of permission as indicated above is consistent with its obligations under section 15(1)(a) and (d) of the Climate Action and Low Carbon Development Act 2015, as amended

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence me, directly or indirectly, following my professional assessment and recommendation set out in my report in an improper or inappropriate way.

Heidi Thorsdalen
Planning Inspector

5th October 2026

Appendix A: List of Public Submissions Received

A.1 Public submission received (Application)

1. Adrian Greaney
2. Adrian Nevin
3. Agnes Quirke
4. Aideen and Christopher Smyth
5. Albert Dolan TD
6. Alphamed Consulting Ltd
7. Anita Nolan
8. Anita Stone
9. Ann Rattigan
10. Anne Cunningham
11. Anne Gilligan
12. Anne Marie Duffy
13. Ann-Marie & StJohn Searle
14. Anthony Scarry and Siobhan O'Connell
15. Aoife Healy
16. Austin Hopkins
17. Barnaderg Cooloo Windfarm Action Collective CLG
18. Barnaderg Gortbeg GWS, iHydro-G c/o Pamela Bartley
19. Bernie Stone
20. Bina Devaney
21. Board of Management, Brierfield National School
22. Breda Wilson Connolly
23. Brenda Greaney
24. Brian Donoghue
25. Brian Fahy
26. Bridie Delaney
27. Bridie Joyce
28. Bridie Keane
29. Caoimhe Whyte
30. Carl and Irene Morrissey
31. Carmel McGrath and Family
32. Carol McWalter
33. Caroline & William Ward
34. Caroline Greaney
35. Caroline Lohan
36. Caroline Wilson
37. Catherine Donnellan
38. Catherine Whyte
39. Catriona Devaney
40. Christina and Martina Nolan
41. Christina Burke
42. Clare O'Rourke
43. Cllr Michael Connolly
44. Colin and Shirley Daly
45. Colin Fahy
46. Colm Duffy
47. Con Sheehan
48. Cora Joyce
49. Councillor Declan Geraghty
50. Damian & Mara Gavin
51. Damien Greaney
52. Damien Mitchell
53. Damien Stone
54. Darragh Whyte
55. Darran Shaughnessy
56. David Cunningham
57. David Devaney
58. David Sheehan
59. Declan Henry
60. Declan McWalter
61. Deirdre Abbas
62. Delia M. Ganley
63. Diarmuid Flaherty
64. Don Doyle
65. Donal Gilligan
66. Eamon Mannion
67. Eanna Wilson and Aoife Murphy
68. Eco Advocacy
69. Eva Herwood
70. Fergas O'Rourke
71. Flippa Windsor
72. Francis Lohan
73. Freda Potter
74. Gabriel and Mary Mannion

75. Gabriel Greaney
76. Gearoid Smyth
77. Gerard Burke
78. Gerard Monaghan
79. Gerard Silke
80. Happy Tots Early Years Service
81. Helen Treacy
82. Imelda Windsor
83. Jake Lohan
84. James and Rola Donnellan
85. James Henry
86. James Hughes
87. James Neary
88. Jarlath Oliver Smyth
89. Jason Connolly
90. Joe Desmond
91. Joe Hennelly
92. Joe Meehan
93. John and Mary Fleming
94. John Fahy
95. John Fahy c/o Daniel Melia, Daniel Melia Engineering Limited
96. John Flemming
97. John McWalter
98. John Oliver and Sharon Meehan
99. John Sweeney
100. John Whyte
101. John, Eileen and John Christopher O'Connell
102. Joseph Silke
103. Karen Carrick
104. Karen McGovern
105. Kathleen Connolly
106. Kathleen Hession
107. Katie Ann Stone
108. Keith Whyte
109. Kenneth Shaughnessy and Clare Nee
110. Kevin Courtney
111. Kevin Healy
112. Kevin Rooney
113. Killererin Community Council CLG
114. Killererin Developments Co. Ltd
115. Laura Kelly
116. Liam and Bridie Jones
117. Liam Donohue
118. Lisa McMullin
119. Louis O'Hara TD
120. Luke Silke
121. Margaret Collins
122. Marian Cunningham
123. Marie O'Connell
124. Marie Silke
125. Marion Stone
126. Martin and Evelyn Stone
127. Martin Bermingham
128. Martin Greaney
129. Martin Joe and Mary Boyle
130. Martin Lavelle
131. Martin Lohan
132. Marwan Abbas
133. Mary Burke
134. Mary Connell
135. Mary Gallagher
136. Mary Mullins
137. Maura Joyce
138. Maureen Nolan
139. Megan Boyle
140. Michael and Pauline Hughes
141. Michael Healy
142. Michael Kelly
143. Michael Stone
144. Michelle and Alan Miskell
145. Michelle Stone
146. Mike McGoldrick
147. Niamh Donohue
148. Nicholas Stone
149. Nicola Mitchell
150. Nicola Stone
151. North East Galway Environmental Protection CLG
152. Olivia Rooney
153. Orla and Kevin McDonagh
154. Orla Healy
155. Paddy Quinn
156. Padhraic Stone
157. Padraic Hennelly
158. Padraic Meehan
159. Padraic Mitchell
160. Pat McKeogh
161. Patricia Herwood
162. Patrick and Pauline Hansberry
163. Patrick Duffy

164. Patrick Joyce
165. Patrick McGarry
166. Patrick Nevin
167. Patrick Stone
168. Paul and Suzanne Connell
169. Pauline Donohue
170. Pauline Henry
171. Peter Greaney
172. Peter Greaney
173. Peter Keaveney
174. Peter Roche TD
175. Phelim Conacur
176. Philip Windsor
177. Philomena Conway (nee Stone)
178. Professor Mike Gormally FRES
179. Rachael Hanly
180. Richard McWalter
181. Richie Mc Walter
182. Ronan Gilligan
183. Rosaleen Parsons
184. Ryan Gavin
185. Sandra & Shane Kelly
186. Sarane Healy
187. Seamus Crowe
188. Sean Canney
189. Sean Rooney
190. Senator Anne Rabbitte
191. Shane Stone
192. Sheila Stone
193. Sinead Gilligan
194. Sinead Kilcourse
195. Stephanie Mannion
196. Teresa Donnellan
197. Theresa Smyth
198. Thomas and Maureen Mulry
199. Thomas Healy
200. Thomas Herwood
201. Thomas John Burke
202. Thomas McHugh
203. Thomas Meehan
204. Thomas Tighe
205. Tom Quirke
206. Tommy Nicholson
207. Tommy Whyte
208. Vincent Coen
209. Vivienne Mannion
210. Warren Greaney
211. Wild Ireland Defence CLG
212. William Jones
213. William McDonnell

A.2 Public Submission received (Response to Submissions Circulation)

1. Anita Nolan
2. Ann-Marie & StJohn Searle
3. Barnaderg Cooloo Windfarm Action Collective CLG
4. Barnaderg Gortbeg GWS, Hydro-G c/o Pamela Bartley
5. Breda Wilson
6. Brian Donoghue
7. Caroline Wilson
8. Colin and Shirely Daly
9. Damian & Mara Gavin
10. Damien Stone
11. Delia Ganley
12. Diarmuid Flaherty
13. Eanna Wilson and Aoife Murphy
14. Gabriel & Mary Mannion
15. James Neary
16. John Fahy co Daniel Melia
17. Katie Ann Stone
18. Margaret Collins
19. Martin Lavelle
20. Maura Joyce
21. Maureen Nolan
22. Nicola Stone
23. Orla and Kevin McDonagh
24. Peter Greaney
25. Shane Stone
26. Stephanie Maninon
27. Tom Quirke
28. Wild Ireland Defence CLG

Appendix B.1: Stage 1 Appropriate Assessment Screening

Screening for Appropriate Assessment Test for likely significant effects	
Step 1: Description of the project and local site characteristics	
Brief description of project	Wind Farm: Construction of 9 wind turbines and associated development and associated temporary and permanent infrastructure. Turbine Delivery Route: temporary accommodation works at N63/R332 junction and at site entrance (R332). Future Grid Connection: 110kV substation compound, Battery Energy Storage System and underground cabling to existing 110kV Cloon substation. Refer to Section 3.0 of Inspector's Report
Brief description of development site characteristics and potential impact mechanisms	The subject site is in located in a rural and lowland landscape. The elevation range between 65m AOD to 85 AOD with local landform undulations. The subject site comprises of areas of agricultural grassland, raised bog and cutover bog, and commercial forestry, overlapping with Cooloo Bog. The subject site drains to River Clare via Grange River and Abbert River, and is within Clare-Corrib Groundwater Body (GWB) (IE_WE_0020). There are mapped streams within the subject site and a number of drains. Surface water and groundwater reported to discharge to Lough Corrib SAC. The subject site is underlain by karst. There are a number of hydrological and hydrogeological pathways and potential ecological pathways.
Screening report	Y – Appropriate Assessment Screening Report and Natura Impact Statement, Cooloo Wind Farm, Co. Galway (MKO, September 2025)
Natura Impact Statement	Y – As above.
Relevant submissions	Refer to Sections 4.0 of Inspectors Report, includes:

- **Chief Executive Report - Galway County Council:**
  - Outlines that the subject site is located within the same ground waterbody as Lough Corrib SAC and Lough Corrib SPA (Clare-Corri b - IE_WE_G_0020), and that the flow directions are to the southwest, with all groundwater discharging to Lough Corrib.
  - Outlines that there is potential for significant effects on the groundwater body Clare-Corrib that result in significant effects on the Groundwater Dependant Terrestrial Ecosystems (GWDTE) of the designated habitats and species of this SAC.
  - Includes surface water management measures.
- **DAU:**
  - Notes that the North of the subject site is adjacent to the Lough Corrib SAC, with one river crossing on the Grange River falling within the SAC.
- **Inland Fisheries Ireland:**
  - Includes surface water management measures.
  - Notes the primary concern of IFI is to protect the aquatic species and habitat, including water quality and the related riparian zone, and at all times the precautionary approach should be applied.
  - Notes that the subject site is located in the Clare River Catchment which includes Lough Corrib SAC, and within the Grange and Abbert River sub catchments.

- **Observations**, a summary of main relevant issues as follows:
  - The information presented by the applicant is lacking and there are gross omissions of factual information with respect to Lough Corrib SAC and Lough Corrib SPA.
  - Streams are the headwaters of the Clare River and hence supply sources for the Lough Corrib SAC. The proposed development in the headwaters of the catchment represents a risk to that water supply and ecology, especially in quality. The entire Clare River catchment is designated as highly valuable for salmon and it's on objective of the same Lough Corrib SAC. All tributary streams to the Corrib are salmonid.
  - The proposed windfarm, because of its proximity to the Lough Corrib SAC along a stretch of bog has the potential to adversely affect these sites.
  - For Lough Corrib SAC, the NIS relies heavily on broad site descriptions without providing definitive conclusions on how the project may alter water quality, hydrology, or ecological processes within the SAC's extensive network of rivers, turloughs, bogs and wetlands.

<table>
<tr><th colspan="2">Screening for Appropriate Assessment
Test for likely significant effects</th></tr>
<tr><td></td><td>Habitat survey found Molinia caerulea (purple moor-grass) which is qualifying interest for the Lough Corrib SAC. The SAC's qualifying interests include various wetland habitats like oligotrophic and hard oligo-mesotrophic standing waters, water courses, and calcareous fens.
NIS contains significant gaps in its assessment of SPA birds, Annex 1 habitats, Annex II species, hydrological connectivity, and cumulative impacts. The SPA specifically protects waterbird species, both resident and migratory, that depend on the wetlands. Golden Plover recorded, this is a qualifying interest for the Lough Corrib SPA.
The NIS does not provide evidence that marsh fritillary surveys were conducted.
These omissions mean that the NIS does not provide the "complete, precise and definitive findings“ required by CJEU jurisprudence and acknowledged within its own methodology section. It fails to assess the full range of potential impacts on the conservation objectives of the Lough Corrib SAC and SPA, including effects on supporting habitats, hydrology. sensitive species, and cumulative pressures.
Reasonable scientific doubt remains as to the absence of adverse effects on site integrity, and the competent authority cannot lawfully rely on the NIS to conclude that the project will not adversely affect any European site.</td></tr>
<tr><td colspan="2">I note the applicant’s Appropriate Assessment Screening Report, Table 4-1 identifies 13 no. European Sites within a Likely Zone of Influence of the proposed development. The applicant did not identify a potential or complete source-pathway-receptor chain for the following 7 no of sites:

• Shankhill West Bog SAC (site code 000326); Carrownagappul Bog SAC (Site Coe 001242); Curraghlehanagh Bog SAC (002350); Lough Lurgeen Bog/Glenamaddy Turlough SAC (Site Code 000302); Lisnageeragh Bog and Ballinastack Turlough SAC (Site Code 000296); and Camderry Bog SAC (Site Code 002347).

I am satisfied that no potential source-pathway-receptor chain exist between these European Sites and the proposed development and that these European sites can be excluded from further consideration.

The River Suck and Callows SPA (Site code 0040097) was not included in the applicant’s Appropriate Assessment Screening Report and I have included it below.</td></tr>
</table>

Screening for Appropriate Assessment Test for likely significant effects				
Only European sites where a potential source-pathway-receptor chain exist between them and the proposed development have been included in Screening for AA below.				
Step 2. Identification of relevant European sites using the Source-pathway-receptor model				
European Site (code)	**Qualifying interests[1] Link to conservation objectives (NPWS, date)**	**Distance from proposed development (km)**	**Ecological connections[2]**	**Consider further in screening[3] Y/N**
Special Areas of Conservations (SAC)				
Lough Corrib SAC (Site Code 000297)	1029 Freshwater Pearl Mussel Margaritifera margaritifera 1092 White-clawed Crayfish Austropotamobius pallipes 1095 Sea Lamprey Petromyzon marinus 1096 Brook Lamprey Lampetra planeri 1106 Salmon Salmo salar 1303 Lesser Horseshoe Bat Rhinolophus hipposideros 1355 Otter Lutra lutra 1393 Slender Green Feather-moss Drepanocladus vernicosus 1833 Slender Naiad Najas flexilis 3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) 3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea 3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	Wind farm site: 90m (north). GCR: Adjacent.	No direct connection. No instream works as part of GCR crossing of Grange River. Hydrological connection via Grange River (2.6km downstream) and Abbert River (4.6km downstream). Hydrogeological connection via groundwater body (Clare-Corrib – IE_We_G_0020), flow directions towards the southwest and discharging to Lough Corrib. Potential ex-situ effects on QI species, otter and white-clawed crayfish.	Y

Screening for Appropriate Assessment Test for likely significant effects				
	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 6410 Molina meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 7110 Active raised bogs 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion 7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae 7220 Petrifying springs with tufa formation (Cratoneurion) 7230 Alkaline fens 8240 Limestone pavements 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles 91D0 Bog woodland Conservation objectives (NPWS, April 2017): CO000297.pdf			
Levally Lough SAC (Site Code 000295)	3180 Turloughs Conservation objectives (NPWS, December 2020): CO000295.pdf	Wind Farm: 3.2km (northwest). GCR: 8.3km (north)	No direct connection. No indirect hydrological connection. Upstream location within the same groundwater body (Clare-Corrib – IE_We_G_0020), no indirect hydrogeological connection.	N
Derrinlough (Cloonkeenleananode) Bog SAC (Site Code 002197)	7120 Degraded raised bogs still capable of natural regeneration Conservation objectives (NPWS, July 2023):	Wind Farm: 3.2km (northeast). GCR: 7.3km (northeast)	No direct connection. No indirect hydrological connection. Upstream location within the same groundwater body (Clare-Corrib –	N

Screening for Appropriate Assessment Test for likely significant effects				
	CO002197.pdf		IE_We_G_0020), no indirect hydrogeological connection.	
Monivea Bog SAC (Site Code 002352)	7110 Active raised bogs 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion Conservation objectives (NPWS, December 2015): CO002352.pdf	Wind Farm: 11.3km (southwest). GCR: 8.7km (south)	No direct connection. No indirect hydrological connection. Remote weak indirect hydrogeological connection, located within the same groundwater body (Clare-Corrib – IE_We_G_0020).	N
Galway Bay Complex SAC (Site Code 000268)	1140 Mudflats and sandflats not covered by seawater at low tide 1150 Coastal lagoons 1160 Large shallow inlets and bays 1170 Reefs 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1355 Otter Lutra lutra 1365 Harbour Seal Phoca vitulina 1410 Mediterranean salt meadows (Juncetalia maritimi) 3180 Turloughs 5130 Juniperus communis formations on heaths or calcareous grasslands 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae	Wind Farm: 27.9km (southwest). GCR: 21.2km (southwest).	No direct connection. Remote weak indirect hydrological and hydrogeological connection via Lough Corrib.	N

Screening for Appropriate Assessment Test for likely significant effects				
	7230 Alkaline fens 8240 Limestone pavements Conservation objectives (NPWS, June 2026): CO000268.pdf			
Special Protection Area (SPA)				
River Suck Callows SPA (Site Code: 004097)	Whooper Swan (Cygnus cygnus) [A038] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wigeon (Mareca penelope) [A855] Wetland and Waterbirds [A999] Conservation objectives (NPWS, December 2022): CO004097.pdf	Wind Farm: 21.2km (east).	No direct connection. No hydrological connection or hydrogeological connections. Potential ex-situ effects including barrier, collision risk and displacement.	**Y**
Lough Corrib SPA (Site Code 004042)	A051 Gadwall Anas strepera A056 Shoveler Anas clypeata A059 Pochard Aythya ferina A061 Tufted Duck Aythya fuligula A065 Common Scoter Melanitta nigra A082 Hen Harrier Circus cyaneus A125 Coot Fulica atra A140 Golden Plover Pluvialis apricaria A179 Black-headed Gull Chroicocephalus ridibundus A182 Common Gull Larus canus A193 Common Tern Sterna hirundo Arctic A194 Tern Sterna paradisaea	Wind Farm: 23.5km (southwest). GCR: 14.6km (southwest).	No direct connection. Potential ex-situ effects including barrier, collision risk and displacement. Hydrological connection via Grange River (55.3km downstream) and Abbert River (42.4km downstream). Hydrogeological connection via groundwater body (Clare-Corrib – IE_We_G_0020), flow directions	**Y**

Screening for Appropriate Assessment Test for likely significant effects				
	A395 Greenland White-fronted Goose Anser albifrons flavirostris A999 Wetlands Conservation objectives (NPWS, January 2023): CO004042.pdf		towards the southwest and discharging to Lough Corrib.	
Inner Galway Bay SPA (Site Code 004031)	A003 Great Northern Diver Gavia immer A017 Cormorant Phalacrocorax carbo A028 Grey Heron Ardea cinerea A046 Brent Goose Branta bernicla hrota A050 Wigeon Anas penelope A052 Teal Anas crecca A056 Shoveler Anas clypeata A069 Red-breasted Merganser Mergus serrator A137 Ringed Plover Charadrius hiaticula A140 Golden Plover Pluvialis apricaria A142 Lapwing Vanellus vanellus A149 Dunlin Calidris alpina alpina A157 Bar-tailed Godwit Limosa lapponica A160 Curlew Numenius arquata A162 Redshank Tringa totanus A169 Turnstone Arenaria interpres A179 Black-headed Gull Chroicocephalus ridibundus A182 Common Gull Larus canus A191 Sandwich Tern Sterna sandvicensis A193 Common Tern Sterna hirundo A999 Wetlands Conservation objectives (NPWS, May 2013): CO004031.pdf	Wind Farm: 27.9km (southwest). GCR: 21.2km (southwest).	No direct connection. Remote weak indirect hydrological and hydrogeological connection via Lough Corrib. No potential ecological connection to QI species population given the significant intervening distance including core foraging distances and, limited or no suitable habitat and limited survey observations.	**N**

Screening for Appropriate Assessment Test for likely significant effects				
Step 3. AA Screening matrix				
Site name **Qualifying interests**	**Possibility of significant effects (alone) in view of the conservation objectives of the site***			
	Impacts		**Effects**	
Site 1: Lough Corrib SAC (000297) As listed above. Conservation objectives (NPWS, April 2017): CO000297.pdf	**Direct:** No, windfarm located outside the SAC. No instream work proposed as part of grid connection route. **Indirect:** Potential for negative impacts on groundwater and surface water quality and on aquatic receptors due to construction related emissions.		Potential damage to lake habitats and Groundwater Dependent Terrestrial Ecosystems of qualifying interests from water quality degradation. Potential damage to the freshwater qualifying interest species dependent on water quality and their habitats, an impact of sufficient magnitude could undermine the sites conservation objectives. Potential disturbance risks to mobile species during construction. Potential negative effect on Otter prey through water quality degradation.	
	Likelihood of significant effects from proposed development (alone): **YES**			
	If No, is there likelihood of significant effects occurring in combination with other plans or projects?			
	Possibility of significant effects (alone) in view of the conservation objectives of the site*			
Site name **Qualifying interests**	**Possibility of significant effects (alone) in view of the conservation objectives of the site***			
	Impacts		**Effects**	
Site 2: River Suck Callows SPA (004097) As listed above.	**Direct:** No. **Indirect:** Potential for negative ex-situ impacts.		Potential ex-situ disturbance/barrier/mortality effects.	

Screening for Appropriate Assessment Test for likely significant effects		
Conservation objectives (NPWS, November 2022): CO004097.pdf		
	Likelihood of significant effects from proposed development (alone): **YES**	
	If No, is there likelihood of significant effects occurring in combination with other plans or projects?	
Site name **Qualifying interests**	**Possibility of significant effects (alone) in view of the conservation objectives of the site***	
	Impacts	**Effects**
Site 3: Lough Corrib SPA (004042) As listed above. Conservation objectives (NPWS, January 2023): CO004042.pdf	**Direct:** No. **Indirect:** Potential for negative impacts on water quality and ex-situ impacts.	Potential ex-situ disturbance/barrier/mortality effects. Potential to impact water-dependent species because of a reduction in water quality and spread of invasive species.
	Likelihood of significant effects from proposed development (alone): **YES**	
	If No, is there likelihood of significant effects occurring in combination with other plans or projects?	
Step 4 Conclusion and Screening Determination		
Based on the information provided in the screening report, site visit, review of the conservation objectives and supporting documents, the Specialist Consultant Report on hydrogeology (Appendix C of Inspector's Report), I consider that in the absence of mitigation measures beyond best practice construction methods, the proposed development has the potential to result significant effects on: - Lough Corrib SAC (Site code: 000297); - River Suck Callows SPA (Site code: 004097); and, - Lough Corrib SPA (Site code: 004042).		

Screening for Appropriate Assessment Test for likely significant effects
I concur with the findings in the applicant's Appropriate Assessment Screening Report that such impacts could be significant in terms of the stated conservation objectives of the SAC and SPAs when considered on their own and in combination with other projects and plans in relation to surface water and groundwater quality and disturbance on qualifying interest habitats and species.
In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in the AA screening, it is not possible to exclude the possibility that proposed development alone would result significant effects on Lough Corrib SAC (Site code: 000297); River Suck Callows SPA (Site code: 004097) and Lough Corrib SPA (Site code: 004042) in view of the sites conservation objectives. It is therefore determined that an appropriate assessment of the proposed development is required on the basis of the possible effects of the project 'alone'. Further assessment in-combination with other plans and projects is not required at screening stage.

Appendix B.2: Stage 2 Appropriate Assessment

Appropriate Assessment
The requirements of Article 6(3) as related to appropriate assessment of a project under part XAB, sections 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section.
Taking account of the preceding screening determination, the following is an appropriate assessment of the implications of the proposed development in view of the relevant conservation objectives of Lough Corrib SAC (Site code: 000297) and Lough Corrib SPA (Site code: 004042) based on scientific information provided by the applicant and considering expert opinion set out in observations on nature conservation and experts on behalf of the Commission. The information relied upon includes the following: • Appropriate Assessment Screening Report and Natura Impact Statement, Cooloo Wind Farm, Co. Galway (MKO, September 2025) • Environmental Impact Assessment Report Cooloo Wind Farm, Co. Galway (MKO, September 2025). • Applicant's Response to submissions • Specialist Report, prepared by JD Solutions on hydrogeology (Appendix C of Inspectors Report) I am satisfied that the information provided is adequate to allow for Appropriate Assessment. I am satisfied that all aspects of the project which could result in significant effects are considered and assessed in the NIS and mitigation measures designed to avoid or reduce any adverse effects on site integrity are included and assessed for effectiveness. **Submissions/observations** Summary of planning authority reports, submission and observations can be located in Sections 4.0 of the Inspectors Report. Summary of AA related matter in AA Screening above (Appendix B.1).

Appropriate Assessment			
Lough Corrib SAC (SITE CODE 000297): **Summary of Key issues that could give rise to adverse effects (from screening stage):** **(i) Potential to impact water-dependent species because of a reduction in water quality.** (ii) **Disturbance of mobile species** (iii) **Spread of invasive species** **Note. See Section 5.1 and Table 5-1 of the NIS**			
Qualifying Interest features likely to be affected	**Conservation Objectives (CO) Targets and attributes**	**Potential adverse effects**	**Mitigation measures (summary)**
1029 Freshwater Pearl Mussel (Margaritifera margaritifera)	To restore the favourable conservation condition. Relevant Attribute/Target: Population structure (recruitment): Restore to at least 20% of population no more than 65mm in length; and at least 5% of population no more than 30mm in length. Water quality: restore EQR for macroinvertebrates and phytobenthos. Host fish: Maintain sufficient juvenile salmonids to host glochidial larvae.	Not recorded. No hydrological connection to the targeted river systems. Potential for indirect effect on water quality downstream could impact on the salmonid balance.	NIS Section 6. Best practice mitigation and monitoring measures designed to control, manage and attenuate surface water run off during site excavation, tree felling, construction including concrete pours, road works, trenching, etc. and operational phases. Includes for no instream works at watercourse crossing and buffers to surface water and potential groundwater features.
1092 White-clawed Crayfish Austropotamobius pallipes	To **maintain** the favourable conservation condition. Relevant Attribute/Target: Distribution (rivers): No reduction.	Recorded during surveys on Dangan Eighter Stream (Sites A1 and D2). Known to be located in Abbert River, not recorded during surveys. Population	Water quality mitigation and monitoring measures, as above.

Appropriate Assessment			
	Population structure (recruitment): occurrence of juveniles and females with egg. Disease: No instances. Water quality: At least Q3-4 (EPA sample sites) Habitat quality: no decline in habitat heterogeneity or quality.	recorded in Dangan Eighter Stream, c. 2.6m upstream of the SAC considered intrinsically linked to the population within the upper reaches of Lough Corrib SAC. Crayfish plague detected in eDNA sampling, Grange River. Works within stream channel to reprofiling the banks of the stream at the 4th watercourse crossing as per Table 2.1, Appendix 4.2. Ex-situ effects and risk of bio security and spread of crayfish plague. Water quality degradation such as silt laden runoff could undermine the conservation objective	
1095 Sea Lamprey Petromyzon marinus	To **restore** the favourable conservation condition. Relevant Attribute/Target: Population structure: Juvenile Juvenile density in fine sediment: at least 1/m2 Extent and distribution of Spawning habitat: No decline. Availability of juvenile habitat: More than 50% of sample site positive.	No recordings from surveys. Known to congregate in River Corrib, with further upstream passage impeded. Water quality degradation such as silt laden runoff could undermine the conservation objective, particularly spawning habitat.	Water quality mitigation and monitoring measures, as above.
1096 Brook Lamprey Lampetra planeri	To **maintain** the favourable conservation condition. Relevant Attribute/Target:	No recordings from surveys. No distribution map.	Water quality mitigation and monitoring measures, as above.

Appropriate Assessment			
	Population structure: Juvenile Juvenile density in fine sediment: at least 5/m2 Extent and distribution of Spawning habitat: No decline. Availability of juvenile habitat: More than 50% of sample site positive.	Water quality degradation such as silt laden runoff could undermine the conservation objective, particularly spawning habitat.	
1106 Salmon Salmo salar	To **maintain** the favourable conservation condition. Relevant Attribute/Target: Adult spawning fish: conservation limits consistently exceeded. Salmon fry abundance: maintain or exceed 0+ fry mean catchment Out-migrating smolt abundance: no significant decline Number and distribution of redds: no decline in spawning redds due to anthropogenic causes. Water quality: At least Q4 at all sites sampled by EPA.	Atlantic Salmon at 7 survey sites and good quality salmonid nursey habitat was recorded at a number of locations. Salmon spawn in the headwaters of Lough Corrib tributaries. Water quality degradation, particularly from silt laden runoff could undermine the conservation objective. Disturbance of mobile species.	Water quality mitigation and monitoring measures, as above.
1355 Otter Lutra lutra	To **maintain** the favourable conservation condition. Relevant Attribute/Target: Distribution: No significant decline. Fish biomass available: No significant decline. Barriers to connectivity; No significant increase.	A regular spraint recorded downstream of site A1, 10m from T5-T6 track. Spraint recorded at Grange River (site D3). No breeding (holts) or resting (couch) sites identified. Otter are known to use the wider area for commuting and foraging.	Pre-commencement otter survey. No instream works proposed, so no direct impact on rivers and stream.

Appropriate Assessment			
		Potential for disturbance effects. Works within stream channel to reprofiling the banks of the stream at the 4th watercourse crossing as per Table 2.1, Appendix 4.2. Water quality degradation from silt laden and pollutant runoff could undermine the conservation objective, in particular fish biomass available. Potential for disturbance.	Surface water mitigation measures as a above.
1833 Slender Naiad Najas flexilis	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Population extent: restore spatial extent within lake. • Habitat extent: restore. • Hydrologic regime: water level fluctuations. • Water quality: restore appropriate water quality. • Acidification status: maintain appropriate concentrations. • Water colour: restore/maintain.	Annex II Macrophyte, previously recorded in the northwest of Lough Corrib, and possible habitat in norther part. Water quality degradation, particularly suspended sediments, silts, nutrient and organic matter run off from excavations, disturbing peatlands, tree felling and cements could affect habitat quality and extent and undermine conservation objectives.	Water quality mitigation and monit measures, as above.
3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Habitat extent: area stable or increasing. • Habitat distribution: no decline.	Lake habitat. Found in western basin, total extent not mapped. Water quality degradation, particularly suspended sediments, silts, nutrient and	Water quality mitigation and monit measures, as above.

Appropriate Assessment			
	• Hydrologic regime: water level fluctuations. Water quality (transparency): restore and no decline in appropriate Secchi depth/transparency Water quality (nutrients): restore to sufficiently low levels. Water quality (phytoplankton biomass): restore appropriate water quality. Water quality (phytoplankton composition): maintain appropriate water quality. Water quality (attached algal biomass): restore/maintain trace/absent. Water quality (macrophyte status): maintain high status. Acidification status: maintain appropriate concentrations. Water colour: restore/main appropriate water colour. Dissolved organic mg/l carbon: restore/maintain appropriate levels.	organic matter run off from excavations, disturbing peatlands, tree felling and cements could affect habitat quality and extent and undermine conservation objectives.	
3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Habitat extent: area stable or increasing. • Habitat distribution: no decline. • Hydrologic regime: water level fluctuations. Water quality (transparency): restore and no decline in appropriate Secchi depth/transparency	Lake habitat found in northern basin, total extent not mapped. Annex II macrophyte slender naiad considered a characteristic of habitat. Water quality degradation, particularly suspended sediments, silts, nutrient and organic matter run off from excavations, disturbing peatlands, tree felling and	Water quality mitigation and monit measures, as above.

Appropriate Assessment			
	Water quality (nutrients): restore to sufficiently low levels. Water quality (phytoplankton biomass): restore appropriate water quality. Water quality (phytoplankton composition): maintain appropriate water quality. Water quality (attached algal biomass): restore/maintain trace/absent. Water quality (macrophyte status): maintain high status. Acidification status: maintain appropriate concentrations. Water colour: restore/main appropriate water colour. Dissolved organic mg/l carbon: restore/maintain appropriate levels.	cements could affect habitat quality and extent and undermine conservation objectives.	
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	To **restore** the favourable conservation condition. Relevant Attribute/Target: Habitat area: stable or increasing. Habitat distribution: No decline. Hydrological regime: maintain appropriate regime (metres) Water quality (transparency): restore and no decline in appropriate Secchi depth/transparency Water quality (nutrients): restore to sufficient low levels. Water quality (phytoplankton biomass): maintain appropriate water quality.	Lake habitat. Found in southern basin, total extent not mapped.	Water quality mitigation and monit measures, as above.

Appropriate Assessment			
	Water quality (phytoplankton composition): maintain appropriate water quality. Water quality (attached algal biomass): restore/maintain trace/absent. Water quality (macrophyte status): restore high status. Acidification status: maintain appropriate concentrations. Water colour: restore/main appropriate water colour. Dissolved organic mg/l carbon: restore/maintain appropriate levels.		
3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	To **maintain** the favourable conservation condition. Relevant Attribute/Target: Habitat area: stable or increasing. Habitat distribution: No decline. Hydrological regime (river flow): maintain appropriate regime (metres per second) Hydrological regime (groundwater discharge): maintain appropriate regime (metres per second) Water quality: maintain appropriate water quality to support habitat. Water quality (phosphate): no increase from baseline.	Groundwater-dependent habitats.	Water quality mitigation and monit measures, as above.
7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae	To **maintain** the favourable conservation condition. Relevant Attribute/Target: Habitat area: stable or increasing. Habitat distribution: No decline.	Groundwater-dependent habitats. Total habitat area unknown.	Water quality mitigation and monit measures, as above.

Appropriate Assessment			
	Hydrology: maintain appropriate regime (metres) Water quality: maintain appropriate water quality, particularly nutrient levels.		
7220 Petrifying springs with tufa formation (Cratoneurion)	To **maintain** the favourable conservation condition. Relevant Attribute/Target: Habitat area: stable or increasing. Habitat distribution: No decline. Hydrological regime: maintain appropriate regime (metres, metres per second) Water quality (nitrate): no increase from baseline Water quality (phosphate): no increase from baseline.	Groundwater-dependent habitats. Total habitat area unknown.	Water quality mitigation and monit measures, as above.
7230 Alkaline fens	To maintain the favourable conservation condition. Relevant Attribute/Target: Habitat area: stable or increasing. Habitat distribution: No decline. Hydrology: maintain appropriate regime (metres) Water quality: maintain appropriate water quality, particularly nutrient levels.	Groundwater-dependent habitats. Total habitat area unknown. Water quality degradation, particularly suspended sediments, silts, nutrient and organic matter run off from excavations, disturbing peatlands, tree felling and cements could affect habitat quality and extent and undermine conservation objectives.	Water quality mitigation and monit measures, as above.

Appropriate Assessment		
Other QIs		
1303 Lesser Horseshoe Bat Rhinolophus hipposideros	Not at Risk	Rational for exclusion: Roosts identified to the north of Lough Corrib, proposed development located a significant distance beyond the core foraging range (2.5km). Outside to zone of influence / no pathway. No potential to undermine any conservation objective.
1393 Slender Green Feather-moss Drepanocladus vernicosus	Not at Risk	Rational for exclusion: Terrestrial plant, known location to the west of Lough Corrib and within a different groundwater body. No pathway. No potential to undermine any conservation objective.
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	Not at Risk	Rational for exclusion: Terrestrial habitat, no pathway. No potential to undermine any conservation objective.
6410 Molina meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	Not at Risk	Rational for exclusion: Terrestrial habitat, no pathway. No potential to undermine any conservation objective.
3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	Not at Risk	Rational for exclusion: No potential to undermine any conservation objective. Lake habitat, known locations are upstream to the west of Lough Corrib and within a different groundwater body.
3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea	Not at Risk	As above.
7110 Active raised bogs	Not at Risk	Rational for exclusion:

Appropriate Assessment		
		Terrestrial habitat, active raised bogs located significant distance and upstream of hydrological connections. No pathway. No potential to undermine any conservation objective.
7120 Degraded raised bogs still capable of natural regeneration	Not at Risk	As above.
7150 Depressions on peat substrates of the Rhynchosporion	Not at Risk	As above.
8240 Limestone pavements	Not at Risk	Rational for exclusion: Terrestrial habitat, no pathway. No potential to undermine any conservation objective.
91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles	Not at Risk	Rational for exclusion: Terrestrial habitat, no pathway. No potential to undermine any conservation objective.
91D0 Bog woodland	Not at Risk	Rational for exclusion: Predominately terrestrial habitat, known location a substantial distance from the proposed development. No potential to undermine any conservation objective.
The above table is based on the documentation and information provided on the file and I am satisfied that the submitted NIS has identified the relevant attributes and targets of the Qualifying Interests.		

Assessment of issues that could give rise to adverse effects view of conservation objectives

(i) Potential to impact water-dependent species because of a reduction in water quality

I refer the Commission to the appended report by the Special consultant on hydrogeology. I fully adopt the findings and conclusion of this report. Conclusion of this report is presented below:

Appropriate Assessment
“Risks associated with surface water quality have been appropriately assessed, and are considered to be low as long as the proposed mitigation is quantitatively designed and fully implemented. Mitigation measures to prevent the discharge of contaminated water to surface water have been described, but have not been quantitatively designed. An overarching, evidence based three dimensional and transient, consistent conceptual hydrogeological model that links the Site and the identified receptors is not presented. The hydrogeology of the peat has not been considered. Risks associated with effects on groundwater quantity are low. The lack of an evidence based conceptual hydrogeological model means that the connectivity between the Site, the development and local groundwater linked receptors including SAC rivers, public and private wells/boreholes and a sensitive conduit flow karst aquifer cannot be established, and therefore risks associated with impacts from groundwater pollution cannot be assessed. The risk assessment associated with the construction of the turbine foundations dismisses the risks associated with karst conduit flow in the underlying geology, based on very little evidence. If groundwater levels are low, then the risk associated with the introduction of cement based products cannot be determined; if groundwater levels are high then the risk associated with basal heave and high dewatering rates cannot be determined. Groundwater levels at the turbine locations have not been established. A Natura Impact Statement (NIS) accompanies the EIAR. This report has been prepared to provide the competent authorities with the information necessary to complete an Appropriate Assessment screening and an Appropriate Assessment for the Proposed Project in compliance with Article 6(3) of the Habitats Directive. The NIS identified the potential for effect on Lough Corrib SAC. As such there is a high burden of proof required in ensuring that the Proposed Project, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site. The evidence presented does not robustly support the lack of potential effects on Lough Corrib SAC due to the lack of an overarching, field evidence based three dimensional and transient, consistent conceptual hydrogeological model that links the local and site level geology and hydrology. Therefore it cannot be assumed beyond reasonable scientific doubt that the Proposed Project, individually or in-combination with other plans or projects, will not adversely affect the integrity of a European Site.”
In addition to the above, I have found in Section 10.6 of the Inspectors Report that the proposed works to reprofile the banks of the Dangan Eighter Stream to address peat instability risk and the associated works impacting on the inside of the stream channel has not been assessed,

designed or mitigated. I note The Peat and Spoil Management Plan (Appendix 3, NIS and Appendix 4.3, EIAR) Table 2.1 confirms that reprofiling of the stream bank will be required at the 4th watercourse crossing, crossing of the Dangan Eighter Stream on the access track between T5 and T6. The applicant's NIS Section 2.2.1.11 states that no instream works are proposed and have failed to provide any design details, operational protocols or mitigation measures. The watercourse crossing is noted to be at a location where white clawed crayfish, salmon and otter were recorded during surveys, all qualifying interests in an upstream location of the Lough Corrib SAC.

I also refer to Sections 10.8 and 10.9 of the Inspectors Report where I have concluded that the applicant has not investigated the hydrogeology characteristics of peat on which a floating track is proposed. Impact on water retainment and flow within the peat has not been assessment and the increase of groundwater flows from affected peat into adjacent streams and drains have not been mitigated. This could lead to increased generation of Dissolved Organic Carbon (DOC) in runoff and 'browning of the surface water system.

Having regard to the findings outlined above, I am not satisfied that adverse effects on the conservation objectives and integrity of the Lough Corrib SAC can be excluded beyond reasonable scientific doubt. Accordingly, I do not concur with the conclusion of the Natura Impact Statement.

Mitigation measures and conditions

Based on the foregoing, I am not satisfied that the mitigation measures for the proposed development are adequate.

(ii) Disturbance of mobile species Mitigation measures and conditions

As above, reprofiling of the banks of the stream is proposed requiring works within the stream channel at the location of watercourse crossing of Dangan Eighter Stream watercourse. Signs of otter and white clawed crayfish were recorded at the location of watercourse crossings. Suitability for salmonids was recorded as low in the Dangan Eighter Stream watercourse, however, Atlantic salmon and salmonids nursery habitats were recorded downstream in Grange and Albert. White-clawed crayfish is noted to move limited distance, however it is reasonable to conclude that the local population at Dangan Eighter Stream approximately 2.6km upstream of the Lough Corrib SAC is intrinsically linked to the white clawed crayfish population within the upper reaches of eth Lough Corrib SAC.

Having regard to the findings outlined above, I am not satisfied that adverse effects on the conservation objectives and integrity of the Lough Corrib SAC can be excluded beyond reasonable scientific doubt. Accordingly, I do not concur with the conclusion of the Natura Impact Statement.

Mitigation measures and conditions

Based on the foregoing, I am not satisfied that the mitigation measures for the proposed development are adequate.

Appropriate Assessment

(iii) Spread of invasive species Mitigation measures and conditions

As above, works within the stream channel is proposed and there is the potential for the spread of crayfish plague. The potential for the spread of crayfish plague has not been considered in the NIS and no environmental protocol or mitigation measures identified.

Having regard to the findings outlined above, I am not satisfied that adverse effects on the conservation objectives and integrity of the Lough Corrib SAC can be excluded beyond reasonable scientific doubt. Accordingly, I do not concur with the conclusion of the Natura Impact Statement.

Mitigation measures and conditions

Based on the foregoing, I am not satisfied that the mitigation measures for the proposed development are adequate.

In-combination effects

I am satisfied that in-combination effects has been assessed adequately in the NIS.

I have reviewed the details of these projects, plans and policies which were identified in the NIS. Having regard to the concerns raised in my assessment as to the efficacy of mitigation measures to protect water quality and mobile species in the SAC, I am unable to conclude that no in-combination effects would arise.

Findings and conclusions

The applicant determined that following the implementation of mitigation measures the construction and operation of the proposed development alone, or in combination with other plans and projects, will not adversely affect the integrity of the Lough Corrib SAC.

Based on the information provided and having regard to the findings of the Specialist Consultant Report (see detail above), I am not satisfied that adverse effects arising from aspects of the proposed development can be excluded for the Lough Corrib SAC (site code 000297). While mitigation measures and post-construction monitoring have been proposed by the applicant, I am not satisfied that the mitigation measures proposed to prevent adverse effects have been assessed as being effective and I am not satisfied that these matters can be addressed by way of a condition of a grant of permission.

Appropriate Assessment

Reasonable scientific doubt

I conclude that there is reasonable scientific doubt that the proposed development, individually or in combination with other plans and projects, would adversely affect the integrity of Lough Corrib SAC (site code: 000297) in view of the site's conservation objectives and qualifying interests

Site Integrity

I am not satisfied on the basis of the information provided in the NIS and in the response to submissions, that the proposed development will not affect the attainment of the Conservation objectives for the Lower River Shannon SAC (site code 002165).

River Suck Callows SPA (Site code: 004097):

Summary of Key issues that could give rise to adverse effects (from screening stage):

(i) Ex-situ disturbance/barrier/mortality effects

Note. Not included in NIS

Qualifying Interest features likely to be affected	Conservation Objectives (CO) Targets and attributes	Potential adverse effects	Mitigation measures (summary)
A038 Whooper Swan Cygnus cygnus	To **maintain** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: Sufficient number of locations, area of suitable habitat and available forage biomass.	Recorded during surveys at Horseleap Lough, surrounding waterbodies and flight activity across the subject site. Substantial distance outside core foraging range (5km). There is no evidence to suggest Whooper swan recorded within the subject site are the wintering population of the SPA.	N/A

Appropriate Assessment			
	• Supporting habitat, sufficient area of utilisable habitat available in ecologically important sites outside the SPA.	No potential for adverse effect on barrier effect, collision risk or disturbance/displacement.	
A140 Golden Plover Pluvialis apricaria	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: Sufficient number of locations, area of suitable habitat and available forage biomass.	Recorded during surveys at Horseleap Lough in national important number for wintering population. Substantial distance outside core foraging range (3km) and wintering range (10-12km). There is no evidence to suggest Golden Plover recorded within the site are the wintering population of the SPA. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement.	As above.
A142 Lapwing Vanellus Vanellus	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: Sufficient number of locations, area of suitable habitat and available forage biomass.	Recorded roosting and foraging within the subject site during surveys. Recorded at Horseleap Lough in national important number for wintering population. On account of intervening distance, there is no evidence to suggest lapwing recorded within the subject site are the wintering population of the SPA. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement.	As above.

Appropriate Assessment

Other QIs		Rational
A855 Wigeon Mareca Penelope	Not at risk	Not recorded and outside foraging distance.
A395 Greenland White-fronted Goose Anser albifrons flavirostris	Not at risk	Not recorded and outside foraging distance.
A999 Wetlands	Not at risk	No hydrological or hydrogeological connections.

The above table is based on the documentation and information provided on the file and I am satisfied that the submitted NIS has identified the relevant attributes and targets of the Qualifying Interests.

Assessment of issues that could give rise to adverse effects view of conservation objectives

(i) Ex-situ disturbance/barrier/mortality effects

I note three qualifying interest feature species of the River Suck Callows SPA were recorded during baseline surveys. Having regard to the bird surveys undertaken and that there is no evidence to suggest the subject site being an important foraging area for SPA populations given the intervening distances, I am satisfied that the project would not result in an adverse effect on the integrity of the SPA and that the Proposed Project will not undermine the conservation objectives for the River Suck Callows SPA.

Mitigation measures and conditions

Having regard to the foregoing, I am satisfied that mitigation measures and/or specific conditions are not required to address ex-situ disturbance, barrier, mortality effects on SCI bird species for River Suck Callows SPA (004097).

Mitigation measures and conditions

Having regard to the foregoing, I am satisfied that the mitigation measures and/or specific conditions are satisfactory to address potential significant effects on SCI bird species for River Suck Callows SPA (004097) arising from a result of deterioration in water quality, including the spread of invasive species.

Appropriate Assessment

In-combination effects

I am satisfied that in-combination effects has been assessed adequately in the NIS. The applicant has demonstrated satisfactorily that no significant residual effects will remain post the application of mitigation measures and there is therefore no potential for in-combination effects.

I am there satisfied therefore that there is no potential for in-combination effects.

Findings and conclusions

The applicant did not screen the River Suck Callows SPA (004097) for Appropriate Assessment in respect of ex-situ effects on qualifying bird interest features of the SPA. I consider that the submitted documentation, including the EIAR, NIS, associated appendices and the applicant's Response to Submissions is sufficient to enable an appropriate assessment of this SPA.

Based on the information provided, I am satisfied that adverse effects arising from Proposed Project on SPA can be excluded and no significant effects are predicted.

Reasonable scientific doubt

I am satisfied that no reasonable scientific doubt remains as to the absence of adverse effects.

Site Integrity

The proposed development will not affect the attainment of the Conservation objectives of the River Suck Callows SPA (Site Code 004097). Adverse effects on site integrity can be excluded and no reasonable scientific doubt remains as to the absence of such effects.

Appropriate Assessment			
Lough Corrib SPA (Site code: 004042): **Summary of Key issues that could give rise to adverse effects (from screening stage):** **(ii) Ex-situ disturbance/barrier/mortality effects** **(iii)Potential to impact water-dependent species because of a reduction in water quality.** **Note. See section 5.1.2 and Table 5-14 of the NIS.**			
Qualifying Interest features likely to be affected	**Conservation Objectives (CO) Targets and attributes**	**Potential adverse effects**	**Mitigation measures (summary)**
A051 Gadwall Anas strepera	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass.	Not recorded during surveys. Outside core foraging range (2-3km). No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	NIS section 6. Best practice mitigation and monitoring measures designed to control, manage and attenuate surface water run off during site excavation, tree felling, construction including concrete pours, road works, trenching, etc. and operational phases. Includes for no instream works at watercourse crossing and buffers to surface water and potential groundwater features.
A056 Shoveler Anas clypeata	To **restore** the favourable conservation condition. Relevant Attribute/Target:	Recorded at Horseleap Lough and other waterbodies during surveys. Outside core foraging range (2-3km).	As above.

Appropriate Assessment			
	• Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass.	No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	
A059 Pochard Aythya ferina	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass.	Recorded at Carrownabo Lough, 3.1km from the subject site. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A061 Tufted Duck Aythya fuligula	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass.	Not recorded during surveys. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A065 Common Scoter Melanitta nigra	To **maintain** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of	Not recorded during surveys. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.

Appropriate Assessment			
	locations, area of suitable habitat and available forage biomass.		
A125 Coot Fulica atra	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass.	Not recorded during surveys. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A140 Golden Plover Pluvialis apricaria	To **maintain** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares • Forage spatial distribution, extent and abundance: sufficient number of locations, area of suitable habitat and available forage biomass.	Recorded during surveys at Horseleap Lough in national important number for wintering population. Substantial distance outside core foraging range (3km) and wintering range (10-12km). There is no evidence to suggest Golden Plover recorded within the subject site are the wintering population of the SPA. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A179 Black-headed Gull Chroicocephalus ridibundus	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares	Not recorded during surveys. Outside core foraging range (11.4km) and potential breeding foraging range (18.5km).	As above.

Appropriate Assessment			
	• Prey biomass availability: Sufficient extent of biomass of available prey items across the site.	No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in Not recorded during surveys.	
A182 Common Gull Larus canus	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Prey biomass availability: Sufficient extent of biomass of available prey items across the site. • Disturbance at areas ecologically connected to the colony: Disturbance occurs at levels that do not significantly impact on breeding common gull. • Barriers to connectivity: no significant increase	One observation during breeding season. Within core foraging range (25km) and potential breeding foraging range (50km). Suitable habitats within the subject site are common and widespread. There is no evidence to suggest the subject site is of significant value to the breeding population of the SPA. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A193 Common Tern Sterna hirundo Arctic	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Prey biomass availability: Sufficient extent of biomass of available prey items across the site. • Disturbance at areas ecologically connected to the colony: Disturbance occurs at levels that do not significantly impact on breeding common tern.	Not recorded during surveys. Outside core foraging range (7.1km) and within and potential breeding foraging range (30km). There is no evidence to suggest the subject site is of significant value to the breeding population of the SPA. No potential for adverse effect on barrier	As above.

Appropriate Assessment			
	• Barriers to connectivity: no significant increase	effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	
A194 Arctic Tern Sterna paradisaea	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Prey biomass availability: Sufficient extent of biomass of available prey items across the site. • Disturbance at areas ecologically connected to the colony: Disturbance occurs at levels that do not significantly impact on breeding Arctic tern. • Barriers to connectivity: no significant increase	Not recorded during surveys. Outside core foraging range (7.1km) and within potential breeding foraging range (30km). There is no evidence to suggest the subject site is of significant value to the breeding population of the SPA. No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A395 Greenland White-fronted Goose Anser albifrons flavirostris	To **restore** the favourable conservation condition. Relevant Attribute/Target: • Barriers to connectivity and site use, number location, shape and hectares. • Forage spatial distribution, extent and abundance: Sufficient number of locations, area of suitable habitat and available forage biomass.	Not recorded during surveys. Outside core foraging range (5-8km). No potential for adverse effect on barrier effect, collision risk or disturbance/displacement. Potential for indirect effect on foraging via deterioration in water quality.	As above.
A999 Wetlands	To **maintain** the favourable conservation condition. Relevant Attribute/Target:	Potential for indirect effect on quality and functioning of wetland habitat from deterioration in water quality.	As above.

Appropriate Assessment			
	Wetland habitat quality and functioning: no significant impact on the quality or functioning		
Other QIs		Rational	
A082 Hen Harrier Circus cyaneus	Not at risk.	Located a substantial distance outside the core foraging range (2km).	

The above table is based on the documentation and information provided on the file and I am satisfied that the submitted NIS has identified the relevant attributes and targets of the Qualifying Interests.

Assessment of issues that could give rise to adverse effects view of conservation objectives

(ii) Ex-situ disturbance/barrier/mortality effects

I note five qualifying interest feature species of the Lough Corrib SPA were recorded during baseline surveys. Having regard to the bird surveys undertaken and that there is no evidence to suggest the subject site being an important foraging area for SPA populations given the intervening distances, I am satisfied that the project would not result in an adverse effect on the integrity of the SPA and that the Proposed Project will not undermine the conservation objectives for the Lough Corrib SPA.

Mitigation measures and conditions

Having regard to the foregoing, I am satisfied that mitigation measures and/or specific conditions are not required to address ex-situ disturbance, barrier, mortality effects on SCI bird species for Lough Corrib SPA (004042).

(iii) Potential to impact water-dependent species because of a reduction in water quality and spread of invasive alien species

There is potential for the proposed works to result in water quality degradation. A deterioration in water quality has the potential to indirectly impact waders and waterbirds and impact the habitat for these birds. These species have conservation objective targets relating to water quality and/or habitat quality requirements. I note the intervening distance between the subject site and the Lough Corrib SPA and the proposed suite of mitigation measures to ensure water quality is maintained, as referenced in the foregoing table.

Appropriate Assessment
While, deterioration of water quality is a risk due to concerns of the efficacy of mitigation measures to prevent same, I am satisfied that the SPA is of sufficient distance from the subject site and that the impact on birds associated with this downstream SPA is much less likely to have an adverse effect on site integrity. **Mitigation measures and conditions** Having regard to the foregoing, I am satisfied that the mitigation measures and/or specific conditions are satisfactory to address potential significant effects on SCI bird species for Lough Corrib SPA (004042) arising from a result of deterioration in water quality, including the spread of invasive species.
In-combination effects I am satisfied that in-combination effects has been assessed adequately in the NIS. The applicant has demonstrated satisfactorily that no significant residual effects will remain post the application of mitigation measures and there is therefore no potential for in-combination effects. As above, while, deterioration of water quality is a risk due to concerns of the efficacy of mitigation measures to prevent same, I am satisfied that the SPA is of sufficient distance from the subject site and I have found that the in-combination assessment on cumulative impacts to water quality and hydrology are robust (with respect to SPAs) and no in-combination effects arise. I am there satisfied therefore that there is no potential for in-combination effects.
Findings and conclusions The applicant screened in the Lough Corrib SPA (Site Code 004042) for Appropriate Assessment in respect of impacts on wetland habitat which support the bird interest features of this SPA through hydrological connectivity and ex-situ effects on all qualifying bird interest features of the SPA. I consider that the submitted documentation, including the EIAR, NIS, associated appendices and the applicant's Response to Submissions is sufficient to enable an appropriate assessment of this SPA. Based on the information provided, I am satisfied that adverse effects arising from Proposed Project on SPA can be excluded and no significant effects are predicted. **Reasonable scientific doubt** I am satisfied that no reasonable scientific doubt remains as to the absence of adverse effects.

Appropriate Assessment

Site Integrity

The proposed development will not affect the attainment of the Conservation objectives of the Lough Corrib SPA (Site Code 004042). Adverse effects on site integrity can be excluded and no reasonable scientific doubt remains as to the absence of such effects.

Appropriate Assessment Conclusion:

In screening the need for Appropriate Assessment, it was determined that the proposed development could result in significant effects on Lough Corrib SAC (Site code: 000297), River Suck Callows SPA (Site code: 004097) and Lough Corrib SPA (Site code: 004042) in view of the conservation objectives of those sites and that Appropriate Assessment under the provisions of S177U was required.

Following an examination, analysis and evaluation of the NIS, all associated material submitted, response to submissions, and taking into account submissions by prescribed bodies and observers and the report of specialist consultant on hydrogeology, it is considered:

- With respect to River Suck Callows SPA (Site code: 004097), that adverse effects on site integrity can be excluded in view of the conservation objectives of this site and that no reasonable scientific doubt remains as to the absence of such effects.
- With respect to Lough Corrib SPA (Site code: 004042), that adverse effects on site integrity can be excluded in view of the conservation objectives of this site and that no reasonable scientific doubt remains as to the absence of such effects.
- With respect to the Lough Corrib SAC, that adverse effects on the site integrity of Lough Corrib SAC (Site code: 000297) cannot be excluded in view of the conservation objectives of this site and that reasonable scientific doubt remains as to the absence of such effects. This conclusion is based on the following:
  - Insufficient information submitted to rule out pollution risk via groundwater pathways to sensitive surface water and groundwater receptors. Efficacy of mitigation measures cannot be verified.
  - Insufficient evidence in the design and mitigation of surface water management that groundwater related risks have been accounted for.
  - Insufficient evidence in the design and mitigation of works proposed within stream channels at watercourse crossings.
  - Insufficient evidence has been presented on the impact from floating tracks on water flow and retention within peat habitat adjacent to water courses, and the potential increased generation of Dissolved Organic Carbon (DOC) in runoff.
  - Insufficient evidence to demonstrate that the characteristics and strength of in situ peat adjacent to water courses can support the floating access tracks in terms of peat stability risks.

Appendix C: Specialist Report, prepared by JD Solutions