

TOBIN

Case Number ACP – 324290-26

Lissinagroagh Wind Farm

**Response to Submissions Report
(Part 2)**

FuturEnergy Ireland

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1. INTRODUCTION

1.1 PURPOSE OF THIS REPORT

This report has been prepared in response to a letter from An Coimisiún Pleanála (ACP) dated 03 September 2026, inviting the Applicant (FuturEnergy Lissinagroagh Designated Activity Company) to respond to submissions received from Inland Fisheries Ireland (IFI) and the Northern Ireland Environment Agency (NIEA) in respect of a planning application for the proposed Lissinagroagh Wind Farm development in County Leitrim (ACP case number 324290-26).

We confirm that the following responses address all the matters raised in the submissions.

2. RESPONSES

2.1 INLAND FISHERIES IRELAND

2.1.1 Aquatic Items

Inland Fisheries Ireland (IFI) have reviewed and made observations on the planning submission.

IFI list the relevant three subcatchments and seven sub basins to which the project overlaps and note a number of watercourses traverse the application site. IFI note Drowes sub catchment forms part of Lough Melvin Special Area of Conservation (SAC). The subcatchment supports an internationally important assemblage of fish species, including Arctic char (*Salvelinus alpinus*), Atlantic Salmon (*Salmo salar*), and three distinct species of trout: Gillaroo (*Salmo stomachius*), Sonaghan (*Salmo nigripinnis*), and Ferox (*Salmo ferox*). The Owenmore River provides Salmon and trout spawning and nursery habitat for the Bonet River/Lough Gill fisheries.

The Applicant confirms that consideration has been given to the distinct sub-species of trout: Sonaghen, Gillaroo and Ferox Trout, as well as other local populations of fish within Lough Melvin including Atlantic Salmon and the Arctic Char populations for which Lough Melvin Area of Special Scientific Interest (ASSI) is designated (EIAR Chapter 5 (Biodiversity) Section 5.4.1.1.2.2). In EIAR Chapter 5 (Biodiversity) Section 5.6.2.2.1, it states that the effects of surface water quality degradation include negative effects on the population dynamics of the endemic fish within the lake. However, likely significant effects on these receptors are not anticipated considering the embedded mitigation measures for the protection of water quality (EIAR Chapter 5 (Biodiversity) Section 5.5) inclusive of: the SuDS measures, hydrocarbon interceptors, avoidance of instream works, avoidance of karst features, as well as the use of sediment traps, silt fences, and bunded fuel storage.

In response, the Applicant confirms within the EIAR Chapter 5 (Biodiversity), Section 5.4.2.7.1 Salmon is listed as a Qualifying Interest (QI) species for Lough Gill SAC and Lough Melvin SAC. The effects of surface water quality degradation on these European sites and their QI's is addressed in EIAR Chapter 5 (Biodiversity) Section 5.6.2.1. However, likely significant effects on the listed QIs are not anticipated considering the embedded mitigation measures for the protection of water quality (EIAR Chapter 5 (Biodiversity) Section 5.5) inclusive of: the SuDS measures, hydrocarbon interceptors, avoidance of instream works, avoidance of karst features, as well as the use of sediment traps, silt fences, and bunded fuel storage. The likely significant effects on aquatic ecology is also assessed in EIAR Chapter 5 (Biodiversity) Section 5.6.2.10.

Atlantic Salmon is addressed in EIAR Chapter 5 (Biodiversity) Section 5.6.2.10.1, which considers degradation of surface water quality on Salmon and their spawning habitat. Aquatic Site 8 within the proposed wind farm site which flows into the Owenmore [Manorhamilton]_020, shows high spawning habitat suitability (good flow, riffles and clean gravels) and salmonids were visually observed and the water quality was suitable (Q4 - good). High spawning habitat suitability was also identified at Aquatic Site 10 within the proposed wind farm site which flows into the Brackary_010. All other Aquatic Sites surveyed within the proposed wind farm site, displayed low habitat suitability for Atlantic salmon.

Due consideration is given to Aquatic Sites 15, 17, 22, 24 and 27 which are located along the Grid Connection Route (GCR) and were assessed as having a high suitability for Salmon. Atlantic Salmon was identified at Aquatic Site 15, which is the proposed location for off-road horizontal directional drilling (HDD) Site 1 along the GCR. As the limited vegetation removal to facilitate the temporary launch pits for HDD is located >50 m from any watercourses, there is no potential for siltation and/or sedimentation of watercourses.

Likely significant effects on Atlantic salmon are not anticipated considering the embedded mitigation measures for the protection of water quality (Section 5.5) which consist of:

- the SuDS measures to be implemented within the proposed wind farm site;
- the avoidance of instream works;
- the installation of silt fences at the 11 watercourse crossings within the proposed wind farm site and the two HDD Sites along the GCR;
- the two hydrocarbon interceptors to be installed within the proposed wind farm site;
- the avoidance of karst features; and
- the use of sediment traps, silt fences, and bunded fuel storage.

As stated in EIAR Chapter 5 (Biodiversity) Section 5.6.2.10.1, the Ballagh River (Ballagh_010) in the Lough Melvin SAC contains spawning grounds for Salmon and Brown Trout. However, no likely significant effects are anticipated along this Water Framework Directive (WFD) waterbody as it is not hydrologically connected to the survey area for the proposed wind farm site.

2.1.1.1 *Appropriate Assessment*

Detailed consideration has been given within the Appropriate Assessment Screening Report and Natura Impact Statement (NIS) to the potential for likely significant effects on European sites and, where relevant, the potential for adverse effects on the integrity of the Natura 2000 network.

In particular, Lough Gill SAC and Lough Melvin SAC which were screened into Stage 2 Appropriate Assessment, and a detailed assessment of the potential for adverse effects on the SACs, having regard to the conservation objectives, is provided in Section 5.1.1.11 and Section 5.1.1.12 of the NIS respectively.

The assessment on Lough Gill SAC considered the potential for the proposed development to give rise to the following impact pathways:

- Habitat loss;
- Groundwater impacts;
- Surface water impacts;
- Disturbance to Qualifying Interest (QI) species; and
- Transmission of Invasive Alien Species (IAS).

The NIS subsequently provides a detailed assessment of the potential for adverse effects on the conservation objectives of the following QIs of Lough Gill SAC:

- 3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation;
- 91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*);
- 1092 White-clawed Crayfish (*Austropotamobius pallipes*);
- 1095 Sea Lamprey (*Petromyzon marinus*);
- 1096 Brook Lamprey (*Lampetra planeri*);
- 1099 River Lamprey (*Lampetra fluviatilis*);
- 1106 Atlantic Salmon (*Salmo salar*); and
- 1355 European otter (*Lutra lutra*).

For Lough Melvin SAC, the potential for adverse effects to QIs which are sensitive to the degradation of water quality were assessed in detail, namely (NPWS, 2021e):

- 3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*;
- 1106 Salmon (*Salmo salar*); and
- 1355 Otter (*Lutra lutra*).

Accordingly, the potential adverse effects on aquatic QIs identified in the submission have been considered in detail within the NIS, with the assessment undertaken in view of the conservation objectives for Lough Gill SAC and Lough Melvin SAC and the potential for the proposed development to result in adverse effects on the integrity of the European site.

With regards SAC linkages, it should be noted that Leitrim County Council have not raised any concerns about the Appropriate Assessment Screening Statement as concluded in Section 20.2 Assessment, of the Chief's Executive Report:

"The Planning Authority would agree with the conclusions of the Appropriate Assessment Screening Statement. The Planning Authority would consider that the applicant has carried out sufficient and robust mammal and bird surveys in accordance with best practice and guidance to demonstrate that the development on the site would not have an adverse impact on the site integrity of the nearby sites within the Natura 2000 network. The Planning Authority does not have an evidential basis to dispute the conclusions of the submitted NIS that following mitigation, the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European sites. This conclusion is based on a complete assessment of all aspects of the proposed project, both alone and in combination with other plans and projects, and it has been established beyond scientific reasonable doubt that there will be no adverse effects. On the basis of the submitted NIS, the Planning Authority is satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' conservation objectives."

2.1.2 Forestry Felling

IFI note that significant forestry clearing will be required to facilitate the commencement of the construction phase of this proposal and that the Natura Impact Statement (NIS) makes reference to current forestry operations operating within the application site which drain into adjacent Water Framework Directive (WFD) river waterbodies. The NIS states:

“...these WFD river waterbodies have received a “good” water quality status (TOBIN, 2026, see Table 4). This demonstrates the effectiveness of current water protection mitigation measures implemented within the within the Survey Area of the proposed Wind Farm Site as part of the current forestry operations.”

The IFI submission response states:

“the categorisation of “good” does not on its own indicate that forestry activities have not had a negative impact on local watercourse, furthermore, several of the waterbodies which traverse the site are categorised based on modelling rather than monitoring”

The Applicant acknowledges that the categorisation of “good” does not on its own indicate that forestry activities have not had a negative impact on local watercourses and that the categorisation of some of the waterbodies within the survey area is based on modelling rather than direct monitoring data. The reference to the “good” WFD water quality status of the relevant river waterbodies was intended to provide context regarding the existing receiving environment and current environmental management practices. The absence of identified deterioration in the available WFD classification, whether through monitoring or modelling, does provide some contextual evidence that existing land management practices and water protection measures are likely effective at the waterbody scale. This information is considered appropriate to inform the in-combination effects assessment. Although “good” WFD water quality status cannot be taken as evidence that discrete localised effects have not taken place in the past, it provides useful contextual information regarding overall waterbody condition and supports the assessment of cumulative effects at the catchment scale.

2.1.2.1 Karst, Landslide Susceptibility, and Extreme Weather

With regard to karst features, as part of embedded mitigation turbine hardstands, borrow pits, compounds and substations are not located within 30 m of any known karst features (dolines etc.) or 100 m of swallow holes (EIAR Chapter 5 (Biodiversity) Section 5.5).

In the event any subsurface karst is encountered, a karst protocol will be employed during construction and involves a series of steps and methodologies for karst areas. The karst feature inspection protocol is documented by Madden & O'Hara (2016). Ground stabilisation measures to be employed include compaction, grouting/stabilisation, geotextile or utilising raft foundations. Where weathered limestone or karst is encountered at formation level, the feature will be mapped in detail. Each feature and associated mitigation measure will be documented and included in the safety file for the proposed project. The stabilisation measures will be approved by a geotechnical engineer. Where infilling or grouting is required, works will be supervised by a suitably qualified hydrogeologist to ensure there is no effect on groundwater.

The potential for peat instability as a result of the proposed project is examined with respect to the proposed works as outlined in full in Chapter 7 (Land, Soils and Geology), EIAR Appendix 7 - 1 – Peat Stability Risk Assessment. Both drained and undrained analysis was undertaken to determine the effects of extreme weather events including the effects of intense rainfall and extreme dry events. Mitigation measures include that works will be suspended if heavy rainfall is forecast. A summary of the mitigation measures proposed for peat instability is provided in Chapter 5 (Biodiversity) Section 5.6.2.2.1.4.

With regard to extreme weather events, as part of the embedded mitigation measures, the SuDS measures outlined in EIAR Chapter 8 – Hydrology and Hydrogeology Section 8.4.3 include a total of 25 settlement ponds will be located downstream of road swale sections and at hardstand locations, to manage/buffer volumes of runoff discharging from the drainage system during periods of high rainfall, thereby reducing the hydraulic loading to watercourses. Settlement ponds are designed in consideration of the greenfield runoff rates. The settlement pond design (See Appendix 2-8 Surface Water Management Plan (SWMP) and Drawing 10955-2036) is based on primary settling out of suspended solids from aqueous suspension. As stated in EIAR Chapter 8 – Hydrology and Hydrogeology Section 8.5.1.6, inspections of silt traps will be carried out following prolonged or intense rainfall while maintenance will ensure maximum effectiveness of the proposed measures. Silt traps will be maintained with regular removal of silt. Stockpiles will be evaluated and monitored and kept stable for safety and to minimise erosion.

The construction methods proposed have been developed with regard to best practice in construction and environmental management associated with infrastructure development in an Irish context, including extreme weather of all types (EIAR Chapter 2, Appendix 2-4 Construction Environmental Management Plan (CEMP)). For example, the installation of turbines will only take place under light wind conditions and silt fences will be installed where there is a risk to erosion runoff to watercourses if working during prolonged wet weather. The proposed measures will therefore provide appropriate controls for the range of conditions reasonably foreseeable during the construction phase.

2.1.3 IFI Recommendations

The submission from IFI has raised 24 points in relation to the proposed wind farm. While the Applicant concurs with and is generally aligned with most submissions – items 7, 12, 22 and 23 require a response.

IFI Recommendation No. 7

The use of cement/concrete on site will require careful management; such materials are extremely toxic to aquatic life, and construction staff must be made fully aware of this. This will be especially important during the construction of the turbine bases. Cement and wet concrete must be kept out of all watercourses and drains. Concrete trucks must not wash out on site.

In response, we are in general agreement however, as detailed in Section 8.4.3 the chute of concrete delivery trucks will require cleaning before returning to local roads to avoid soiling of roads and to ensure the chute remains in good working order. Any washout of chutes will be undertaken in a bunded area with disposal in accordance with the Waste Management Act 1996

as amended. No concrete mixing drum (bottle) washing will be undertaken on site. Concrete mixing and delivery lorries will return to the batching plant for washout.

IFI Recommendation No. 12

Floating roads must be considered where any peat encountered is one metre or more in depth. Piling may be considered for turbine bases at deep peat locations and these bases should be a minimum 50 metres from watercourses. This separation distance must be increased where fisheries sensitive waters occur.

In response - The use of floating roads offers a number of advantages, including limiting excavations and reducing material handling. Floating roads were assessed during the design process but were not adopted for the proposed development. Based on the site layout, the location of streams on site, variations due to turf banks, and site slopes, the areas suitable for floating roads are limited (<100 m) and are not proposed on this site. All access tracks are proposed as excavated roads founded on competent glacial till or bedrock. This approach was selected having regard to peat conditions, track geometry, slope stability, drainage requirements and overall constructability.

IFI Recommendation No. 22

GSI's Groundwater Vulnerability Classification for the site ranges from Extreme to Low, with either only thin permeable soils, or no soils, overlying the bedrock. The location of turbines and main construction works must avoid high (and above) groundwater vulnerability areas.

In response, the proposed application notes that areas of high and extreme groundwater vulnerability (see EIAR Chapter 8 (Hydrology and Hydrogeology)) occur throughout the site and reflect the underlying geological characteristics of a typical upland area. As such, a blanket avoidance of all High, Extreme or other elevated groundwater vulnerability areas is not necessary or practicable and would severely limit the ability to develop infrastructure within the site boundary. Groundwater vulnerability mapping identifies the sensitivity of groundwater to contamination, rather than indicating that development cannot occur within such areas. The principal risks associated with development are accidental spillages, concrete contamination, sediment mobilisation and interaction with karst features. These risks have been specifically addressed through site layout design, avoidance of identified karst features, implementation of the CEMP and SWMP, standard controlled storage and handling of fuels and concrete, and implementation of the karst protocol and hydrogeological supervision.

The proposed project has been subject to hydrological and hydrogeological assessment, including groundwater vulnerability mapping, peat depth investigations, and site-specific design considerations as presented within the EIAR and supporting documentation. Turbine, substation and associated infrastructure locations were selected through an iterative design process which considered environmental, engineering and planning constraints, including groundwater vulnerability.

The project has been designed to avoid significant impacts on groundwater through:

- Storage and handling protocols for fuels, oils and hazardous substances;
- Detailed geotechnical and hydrogeological investigations;

- Avoidance of karst features;
- Implementation of the Construction Environmental Management Plan (CEMP) and Surface Water Management Plan (SWMP); and
- Adoption of robust mitigation measures.

The assessment concludes that, with the proposed mitigation measures, no significant adverse effects on groundwater quality, groundwater-dependent receptors, or connected surface water systems are predicted. A karst protocol will be implemented in the event of any voids being encountered. Accordingly, the Applicant considers that the proposed wind farm can be constructed and operated without requiring complete avoidance of all areas classified as High or greater groundwater vulnerability.

IFI Recommendation No. 23

"The GSI Landslide Susceptibility Classification for the site ranges from Low to High; all construction, including roads, must be contained within the areas classified as low landslide susceptibility. The appointed Contractor's Method Statements must be approved by a competent and suitably qualified geotechnical engineer prior to works commencing. Geotechnical monitoring must be in place during construction".

In response, the Applicant notes that the GSI Landslide Susceptibility Mapping is a strategic screening tool and does not replace site-specific geotechnical investigation. The approach taken on the site is not to just use the GSI screening classification but rely on higher resolution Lidar data, site walkover information, detailed site investigation data and peat probing.

The Applicant acknowledges the importance of managing geotechnical and slope stability risks throughout the construction phase. The EIAR (Chapter 2 (Description of Proposed Project) and Chapter 7 (Land, Soils and Geology)) and Peat Stability Risk Assessment (PSRA) (EIAR Appendix 7-1) concludes that, following implementation of the proposed mitigation measures, the risk of peat instability, landslide occurrence and associated impacts is low to negligible. The deterministic stability calculation is carried out in accordance with the Scottish Government Best Practice guidelines (2017) along with the limit state design principles described in Eurocode 7¹, considered the best available guidance for the design of geotechnical engineering elements.

The Overdesign Factors (ODF) reported in the analysis are all greater than 1.0, which is the requirement of Eurocode 7 in terms of protecting against failure in the element under consideration. We note at this stage that the most onerous peat depths (see PSRA Appendix 7-1) were considered as the characteristic peat depth for the failure surface analysed. In reality and given the haggly and discontinuous nature of the peat at the site, it is unlikely that a failure surface could mobilise the full depth of peat considered in the design due to the undulating nature of the interface between the peat and underlying mineral soil. Therefore, the analysis is inherently conservative in this regard. Further, the peat strength controlling failure has been assessed either as a conservative correlation with moisture content or corrected vane shear strength. The vane shear strength is reduced by 50% in accordance with guidance, and the lower

¹ I.S. EN 1997-1:2005 + AC:2013. Geotechnical design - Part 1: General rules (Including Irish National Annex). Dublin, National Standards Authority of Ireland.



strength derived is further reduced by a factor of 1.4 in accordance with Eurocode 7. In effect, the peat strength measured using the shear vane is reduced by a factor of 2.8 before it appears in calculations. We also note that Case 2 considers the temporary surcharge of 1.0 m of peat during the works, which is a short term case and conservative as peat will not be stored on site adjacent the works. Excess peat will be deposited beneath the existing ground level in borrow pits.

A requirement that all construction be confined solely to areas classified as Low susceptibility is not considered necessary or proportionate given the site-specific investigations completed and the mitigation measures proposed.

The Applicant confirms that:

- The contractor will develop Method Statements for works in each PSRA area and that these will be reviewed and approved by the Client's Geotechnical Engineer/Site Geotechnical Supervisor.
- Method Statements will be reviewed and overseen by suitably qualified geotechnical specialists. All risk will be detailed and maintained on a geotechnical risk register.
- The PSRA requires supervision by a Site Geotechnical Supervisor, routine inspections, monitoring of works, identification of new risks, and daily sign-off by supervising staff;
- Peat stability and slope condition monitoring, including movement monitoring and visual inspections where required, will be undertaken in accordance with the PSRA and CEMP.
- Active management procedures will be employed, including geotechnical inspections, suspension of works during adverse weather conditions where required, and implementation of mitigation measures where risks are identified.

The Applicant therefore considers that the proposed geotechnical management framework provides an appropriate and robust basis for managing landslide and peat stability risks without the need for a broad restriction limiting all construction activities exclusively to areas classified as Low susceptibility.

Also as noted in Section 2.2.90 and Appendix C of the Applicant's Response to Submissions Report (submitted to ACP on the 09 September 2026), the Applicant engaged Conor O'Donnell of AGL to undertake a review of the EIAR and associated reports and planning documents for the Lissinagroagh Wind Farm and to carry out an independent assessment of the potential impact of the proposed development on peat stability on the site and to review the karst risk on the project. The following text presents his findings in relation to peat stability.

"Having reviewed the relevant information on the project details, ground and groundwater conditions, spoil management and peat stability I would make the following observations:

- In general, I would consider that the site of the proposed project would be classified as having a relatively low risk of peat instability which is restricted to localised areas at the centre and north end of the site where the main peat deposits are located. This is because:
 - Most of the project is located on the lower slopes of Dough Mountain where there is a discontinuous cover of shallow, vegetated, relatively dry peat that is well drained with an extensive network of existing streams originating in the steeper upper slopes.

- The GSI subsoils map in Figure 7-7 of the EIAR indicates that majority of the project is located in areas where the subsoils are categorised as sandstone glacial till rather than peat. The sections in blanket bog are limited to two localised areas at the central and northern end of the project, i.e.;
- Turbines T7 and T8 and a section of the access track between them at the centre of the site; and
- The area around Turbines T2, T3 and Borrow Pit 1 on Saddle Hill at the north end of the site.
- The ground investigation information in Appendix 2-6A to 2-6C of the EIAR also indicates that the depth of peat is generally shallow across the project area, typically <0.5-1.5 m, with zones of deeper peat up to 2.5-3.5 m limited to the north end of the site between Turbines T1 and T3 on Saddle Hill, and in localised areas along the access tracks and at crane hardstanding areas elsewhere on the site (e.g. Turbines T5 & T8). This is illustrated on the peat depth map in Appendix 1 of the Peat Stability Risk Assessment (PSRA) report in Appendix 7-1 of the EIAR.
- All the trial pits in the shallow peat <1.5 m were stable. Hand vanes carried out in the peat recorded high undrained shear strengths >15-20kPa, and water contents recorded in laboratory classification tests were low for peat at 250-500%. All of this confirms that the areas of shallow peat on the site are dry and well drained with a very low risk of peat instability related to the wind farm project.
- The Geological Survey of Ireland (GSI) landslide susceptibility map shown on Figure 9 of the PSRA report in Appendix 7-1 of the EIAR shows that the majority of the site is located in zones of Low or Moderately Low landslide susceptibility.
- Although there are sections of the project that are in areas of Moderately High landslide susceptibility, the methodology that is used in the GSI classification system is heavily weighted by topography. Therefore, they are in areas of steep terrain where the cover of peat is either locally absent on scree slopes, or limited to a shallow cover of dry vegetated peat where the risk of peat instability would be low and limited to localised shallow small-scale erosional peat slides can occur naturally during periods of heavy rainfall and typically have a low impact.
- Based on studies of peat failures on other wind farms on upland blanket bogs in Ireland, the risk of larger scale peat slides typically occurs where there is a cover of relatively deep peat >2 m deep where there is a convex breaking slope (i.e. where the slope gets steeper downslope) at the boundary between zones of Low to Moderately Low or Moderately High landslide susceptibility directly upslope from a watercourse. Where sections of the Lissinagroagh Wind Farm project are located in areas of deeper peat at the boundary of the Moderately High and High susceptibility zones on the site, they are at the base of the steeper slopes where the concave profile is inherently more stable (i.e. the slope gradients reduce downslope from the windfarm).
- Section 3.5 and Figure 8 of the PSRA in Appendix 7-1 of the EIAR identifies 5 No. historic landslides in peat at the northern end of the site that are recorded on the GSI database. A further 2 No. historic landslides in scree are recorded on the steep southern slopes of Dough Mountain. The landslides in peat are described on the GSI



database as *shallow landslides in blanket peat*. They all occurred on relatively steep slopes in areas of Moderately High susceptibility on undeveloped blanket bog remote to the forestry roads, conifer plantations and existing wind farm infrastructure in the area. They are likely to have occurred naturally as erosional peat slides during periods of heavy or sustained rainfall due to concentrated groundwater flow in more permeable mineral soils, scree or weathered rock below the peat. Aerial photographs of Dough Mountain show scars of numerous similar erosional features on the steep slopes on the north side of the mountain. These are part of the natural erosion process on the land and would have similar characteristics to the two landslides in the scree slopes on the south side of the mountain that are also recorded on the GSI database. All the peat slides on the GSI database around the project area are localised and contained within a short runout distance on the lower slopes so that the impact of the slides would be characterised as low.

- Although the peat slides recorded on the GSI database in this area indicate that there is potential for localised shallow peat slides to occur naturally under similar conditions within the project area, this risk can be adequately mitigated for the wind farm project with a suitably designed drainage system to intercept and divert clean surface runoff, and to collect groundwater flow along the access roads, turbines and crane hardstandings, with controlled dispersed runoff points, check dams and settlement ponds to prevent a buildup of groundwater in the granular rockfill, as proposed. A suitably designed drainage system would reduce the risk to very low for the proposed project.
- Based on the desk study and ground investigation information presented in the EIAR the risk of peat failures should be limited to those areas of locally deeper peat >1.5 m between Turbines T1 and T3 at the northern end of the site, and locally along sections of the access roads and turbine hardstandings near Turbines T4, T5 & T8 in the centre of the site. In the shallow peat <1.5 m the risk should be limited to shallow erosional peat slides under uncontrolled drainage conditions.
- Based on my review of the proposed geotechnical design of the civil engineering works for the wind farm in Chapter 2 of the EIAR, including the Peat and Spoil Management Plan in Appendix 2-1 and the related drawings in the Planning Documents, I would consider that there are significant design and construction mitigation measures incorporated into the proposed works that would significantly reduce the risk of a peat failure so that the risk should be low, i.e.:
 - It is not proposed to construct any floating roads on the peat. All the new site access tracks will be comprised of a suitable thickness of compacted rockfill constructed directly on competent glacial till or rock below the peat. These will exert negligible load on the peat and will also improve overall site stability where they act as a barrage to support peat directly upslope from the roads.
 - Similarly, all the peat and soft clay will be excavated out from under the crane hardstandings, turbine foundations, site compounds and substation sites to support the crushed rock hardstanding areas and reinforced concrete foundations on the underlying competent glacial till and bedrock with negligible loading on the peat.



- None of the excavated peat or mineral soil will be sidecast on the peat slopes. Most of the excavated peat and surplus mineral soil will be placed in the 3 No. designated bunded borrow pit storage areas where it will be fully contained by the glacial till and rock slopes below ground level within deep cells inside the borrow pit. This is the most secure way of storing very soft excavated peat. A small volume of dry peat will be spread on the glacial till at the south end of the site for landscaping.
- The peat and spoil management plan in Appendix 2-1 of the EIAR has taken account of the construction programme constraints that will need to be managed to sequence the requirements for generating rockfill from the borrow pits to construct the access roads and hardstanding areas, while creating capacity to store peat as it is excavated from the central and northern areas of the site where most of the peat is expected to be encountered. 3 No. borrow pits are proposed along the length of the project area and they will be developed in a phased sequence, as required. The borrow pits have also been designed with sufficient capacity to store the estimated volume of peat and surplus mineral soil that will be excavated from the site.
- The drainage design includes comprehensive standard details for upslope interceptor drains and downslope collector drains along the access tracks and crane hardstanding areas, with regular outfalls, check dams and settlement ponds to effectively manage the collection and controlled discharge of surface runoff and to prevent an accumulation of groundwater in the granular rockfill to prevent downslope peat instability from concentrated groundwater seepage and hydrostatic pressures during periods of heavy rainfall.
- I would consider that the proposed earthworks and drainage design for the wind farm in the EIAR and supporting documents incorporates standard details that can be developed into the detailed design to effectively mitigate the risk of peat instability during construction. It is proposed to carry out supplemental ground investigations on the site to develop the design where required, which is standard practice, and construction of the wind farm will be supervised by a suitably qualified geotechnical engineer to ensure that peat stability is effectively managed on site.
- Furthermore, the general design details that have been proposed in the EIAR are the primary mitigation measures that reduce the risk of peat instability to low or very low. The assessment is not reliant on the proposed supplemental investigations during the detailed design stage, or the monitoring and emergency response procedures that will be implemented during construction. These are standard operating procedures that represent standard practice for developing the detailed design of the project, and for managing the low to very low residual risk during construction, which is also a health and safety consideration”.

2.2 NORTHERN IRELAND ENVIRONMENT AGENCY

2.2.1 Transboundary Water Quality, Pollution Prevention, Surface Water Management

The Applicant acknowledges the comments of the Northern Ireland Environment Agency (NIEA) regarding transboundary water quality, pollution prevention, surface water management.

In response, the matters raised have been specifically assessed within the EIAR Appendix 8-1 Water Framework Directive (WFD) Assessment Report and EIAR Appendix 2-7 Surface Water Management Plan. The Applicant confirms that these matters have been comprehensively assessed within the Appendix 8-1 WFD Assessment Report and the Appendix 2-7 Surface Water Management Plan.

Only a limited portion of the proposed wind farm is located within the transboundary Erne catchment. Specifically, Turbines T1 to T5 are situated within the sub-catchments that drain towards Lough Melvin and the transboundary Erne River Basin District, while the majority of the proposed wind farm, including substation, Turbines T6 to T14, are located within the Owenmore River and Bonet subcatchment [Hydrometric area 35]. The grid application, which forms a separate application (Planning Reference: ACP – VA12. 324597) under Section 182 is located entirely within the Bonet subcatchment.

The WFD Assessment specifically considered both the Sligo Bay and Drowes Catchment and the Erne Catchment, including all hydrologically connected downstream receptors. The assessment was undertaken to determine if any element of the proposed wind farm could cause deterioration in the status of any surface waterbody or groundwater body, prevent the achievement of WFD objectives, or adversely affect downstream protected waters.

The assessment confirmed that the receiving waterbodies within and surrounding the site are predominantly of Good Ecological Status (GES) and either classified as Not At Risk or Under Review under the current WFD cycle. The assessment concludes that the proposed wind farm will not cause deterioration in the status of any waterbody and will not compromise the achievement of Good Ecological Status/Potential or Good Groundwater Status.

The Applicant notes that the key test under the Water Framework Directive is whether a development could result in deterioration of status or prevent a waterbody from achieving its environmental objectives. The Water Framework Directive Assessment Report concludes that neither outcome will arise for any of the receiving river waterbodies associated with the proposed project. As no adverse effects are predicted within the adjacent river sub-basins, there is no mechanism for significant effects to occur downstream through the catchment to transboundary waterbodies within Northern Ireland. Accordingly, no effects on cross-border river basin districts are predicted.

A comprehensive Surface Water Management Plan has been prepared to manage runoff and groundwater during construction, operational and decommissioning phases. The drainage strategy is based on Sustainable Drainage Systems (SuDS) principles and is specifically designed to reduce runoff rates, improve water quality and maintain discharges at greenfield runoff rates.



Key measures include interceptor drains, swales, check dams, filter strips, settlement ponds and hydrocarbon interceptors.

The Surface Water Management Plan provides a minimum three-stage treatment train for all runoff generated within the site, comprising filtration, settlement and vegetated conveyance. All runoff from infrastructure areas will pass through settlement ponds before discharge, ensuring suspended solids and potential contaminants are removed prior to entering the receiving environment.

Specific pollution prevention measures are incorporated throughout the project design. Fuels and chemicals will be stored within bunded areas, refuelling will not occur within 50 metres of watercourses, concrete washout waters will be contained within impermeable lined facilities, and emergency spill response procedures will be implemented throughout construction. Wastewater from welfare facilities will be collected and removed off-site by appropriately licensed contractors.

The project has also been designed to minimise interaction with existing watercourses. The Surface Water Management Plan confirms that ten new stream crossings will be provided using clear-span bridge designs and that no in-stream works are required at these crossings. The WFD Assessment concludes that there will be no significant impacts on hydromorphology, watercourse connectivity, flow regimes or aquatic habitats as a result of the development.

A robust monitoring programme will be implemented throughout construction, including continuous turbidity monitoring, daily inspections, weekly sampling and laboratory analysis of water quality parameters (see EIAR Appendix 2-7 SWMP). Trigger values and stop-work procedures are incorporated into the Surface Water Management Plan to ensure that any unforeseen issues are identified and addressed immediately. Accordingly, the Applicant is satisfied that the proposed wind farm will not adversely affect water quality, aquatic ecology, WFD objectives or transboundary water receptors and that the matters raised by NIEA have been comprehensively addressed within the submitted application documentation. The main items are summarised herein in Table 2-1.

Table 2-1 Summary of NIEA request

NIEA requests clear information on:	Comments	Section addressed in
Disposal of foul sewage from construction welfare facilities.	No discharge to onsite streams or cross border streams is proposed for either the construction stage or operational stage. Chapter 8 addresses foul sewage disposal (tankering to a licensed facility). This is proposed for the construction, operational and decommissioning phase.	EIAR - Chapter 8
Surface water management during construction and operation.	A surface water management plan is included in Appendix 2-7	EIAR Appendix 2-7
Works in, near, or affecting watercourses.	A surface water management plan is included in Appendix 2-7. Also addressed in EIAR Chapter 8 - Section 8.4.3 and Section 8.6	EIAR - Chapter 8 and Appendix 2-7
Compliance with pollution prevention guidance	The proposed project will comply with pollution prevention guidance. A surface water management plan is included in Appendix 2-7. The SWMP details concrete, fuel and sediment control measures. Also addressed in EIAR Chapter 8 - Section 8.4.3 and Section 8.6 The EIAR Identifies all watercourse crossings and details eleven crossings and specifies crossing types.	EIAR - Chapter 8 and Appendix 2-7

2.2.2 Transboundary Effects on Biodiversity

Northern Ireland Environmental Agency have stated that the Environmental Impact Assessment (EIA) must consider transboundary effects on sensitive ecological receptors which may impact Northern Ireland both directly and indirectly. NIEA note that cross border river basins require special attention as ecological functionality cross jurisdictional boundaries.

EIAR Chapter 5 (Biodiversity) Section 5.11 summarises the potential for transboundary effects which were assessed during the impact assessment.

Database searches for NBN Atlas and CEDAR returned results of several species of conservation importance, including red squirrel and pine marten, within 10 km of the proposed wind farm site (Table 5-5). However, based on distance from construction activities these

records were ultimately not considered to be within the Zol of the proposed project and no transboundary population-level effects are predicted.

The WFD river waterbody Lattone 35_010, constitutes a potential pathway for likely significant effects between the proposed wind farm site and Lough Melvin NI SAC Northern Ireland (UK0030047), as well as Lough Melvin ASSI. The potential for likely significant effects on Lough Melvin SAC (NI) are considered in EIAR Chapter 5 (Biodiversity) Section 5.6.2.1.1.5, while the potential for likely significant effects on Lough Melvin ASSI are considered in EIAR Chapter 5 (Biodiversity) Section 5.6.2.2.2. However, likely significant effects on these receptors are not anticipated considering the embedded mitigation measures for the protection of water quality (EIAR Chapter 5 (Biodiversity) Section 5.5) inclusive of: the SuDS measures, hydrocarbon interceptors, avoidance of instream works, avoidance of karst features, as well as the use of sediment traps, silt fences, and bunded fuel storage. Furthermore, embedded mitigation measures include the avoidance of instream works through the use of clear span bridges for the three watercourse crossings along the WFD river waterbody Lattone 35_010, which are designed to protect water quality and downstream receptors. There are no significant residual effects anticipated on the QIs of the SAC (NI) nor ASSI nor the overall integrity of these sites as a result of the proposed project.

On this basis, while potential transboundary pathways have been identified and assessed, there are no transboundary residual effects anticipated on IEFs as a result of the proposed project.

2.2.3 Aquatic Environment Pollution

NIEA states that consideration should be given as to how it is proposed to prevent suspended solids / cement or grout / fuel entering the aquatic environment during the construction phase. NIEA also states that the risks from certain activities to the aquatic environment are greater than others and all proposed mitigation must be proportionate and commensurate to that risk. The Applicant should ensure that measures are in place to prevent pollution of surface or groundwater as a result of the activities on site, both during construction and thereafter.

In response, mitigation measures for aquatic habitats and species have been provided with EIAR Chapter 5 (Biodiversity) and Chapter 19 (Schedule of Mitigations). EIAR Section 5.6.2.1.4.1, provides the required mitigation measures for surface water quality, including the management of sedimentation and pollutants. In addition, the Construction Environment Management Plan (CEMP) submitted as part of the documentation supporting the planning application (see EIAR Appendix 2-4), will be revised as required by the appointed contractor and will be treated as a live document to be updated as required throughout the construction of the development. The CEMP, SWMP and SuDS for the proposed project incorporate a large number of tried and tested measures that are used as standard by industry for protection of water quality. The Applicant is aware that certain activities carry greater risks to the aquatic environment than others and the proposed mitigation measures are in line with the potential level of impact to the environment.

3. CONCLUSION

This Submissions Response document has been prepared to address the Lissinagroagh Wind Farm submissions made to ACP from IFI and the NIEA. The proposed wind farm will support the connection of 77-100.8 MW of renewable electricity to the national network. The proposed wind farm has the potential to produce 222,591 MWh to 291,393 MWh of electricity per year, which will be sufficient to supply the equivalent of 52,998 to 69,379 Irish households with electricity per year.

As noted within the submitted EIAR and Planning Statement, this project is needed to assist Ireland in achieving its renewable energy and climate targets. The current global energy emergency due to the recent wars in Eastern Europe and Middle East and the recent national Irish fuel protests also emphasise the need for Ireland to become more energy sustainable through renewable energy projects and a strengthened national grid.

