



An
Bord
Pleanála

Inspector's Report

ABP-312895-22

Development

Ten year permission and thirty year operational life for an additional four wind turbines 155 metres in tip height to the 19 no. turbine Tullynamoyle wind farm (15 no. existing and four permitted) including 20kV substation, site access tracks and upgraded access roads, and underground grid connection to Corderry 110kV substation approx. 9.5km in length.

Location

Turbines – Townlands of Tullinloughan, Lackagh, Tullynamoyle, and Gowlaun, Co. Leitrim. Underground grid connection – Townlands of Tullinwannia, Tullynasharragh, Gubaderry, Tullinwillin, Gortahork, Mullaghmore, Leamaskally, Cornamarve, Drumlumman Glebe, Drumillion, Drumany Glebe, Belhavel, Corrasra and Corderry, Killarga, Co. Leitrim

Planning Authority

Leitrim County Council

Planning Authority Reg. Ref.	21/57
Applicant(s)	Tullynamoyle Windfarm 5 Ltd.
Type of Application	Permission
Planning Authority Decision	Refuse Permission
Type of Appeal	First Party v Refusal of Permission
Appellant(s)	Tullynamoyle Wind Farm 5 Ltd.
Observer(s)	<ol style="list-style-type: none"> 1. Teresa McVeigh 2. Leitrim Wind Industry Awareness 3. Fáilte Ireland 4. Irish Aviation Authority
Date of Site Inspection	22 nd July 2022
Inspector	Anthony Kelly

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1.0 Site Location and Description

- 1.1. The Tullynamoyle wind farm currently comprises 15 no. turbines (T) located in north central Co. Leitrim, approx. 7.5km north of Lough Allen and approx. 10km east of Dromahair. Corderry 110kV substation is approx. 5km south west of the existing wind farm, as the crow flies, approx. 1km south west of Belhavel Lough.
- 1.2. The development site ranges in elevation from 228 metres at proposed T22 to 325 metres at proposed T16 (Ordinance Datum – Malin Head). The proposed turbines are to be generally located on the western slope of Boleybrack Mountain. T16, T17 and T23 are positioned relatively closely together, with T22 set approx. 1.4km to the south of T17. There are a number of roads and tracks that access the proposed turbine locations, of varying standard. T16, T17, and T23 are generally located in relatively open, upland locations. T16 is located adjacent to an area that appears to have recently been subject of tree felling, though the site itself has not been planted with forestry.
- 1.3. The existing turbines are visible in the wider landscape, as are other existing windfarms further to the south of the site. However, the visibility of the wind farm is disrupted by, for example, trees, buildings, contours etc.
- 1.4. The site has an area of 32.71 hectares.

2.0 Proposed Development

- 2.1. On foot of a further information request from the Board, the applicant has clarified that permission is sought for a ten-year permission and a thirty-year operational life for four wind turbines at Tullynamoyle wind farm in addition to the 19 no. permitted turbines (15 no. constructed and four consented) comprising:
 - wind turbine generators with hub heights of 92 metres, rotor diameters of 126 metres and blade tip heights of 155 metres,
 - foundation pads and crane hardstands,
 - one 20kV electrical substation control building, two container units, and associated electrical plant for grid stabilisation,

- 2,497 metres of access tracks (927 metres new and 1,570 metres of existing, upgraded access track,
- site drainage network,
- underground power and communication cables linking proposed turbines T16, T17, and T23 to the proposed 20kV substation,
- underground power and communication cables with an overground stream crossing section linking proposed turbine T22 to a previously consented 20kV substation (P.A. Reg. Ref. 19/26), and,
- underground grid connection linking the proposed 20kV substation to the 110kV substation at Corderry to connect to the national grid.

2.2. The Board's further information request was triggered, in part, by the absence of specific turbine dimensions in the planning application i.e. the dimensions were previously referred to as 'up to' certain dimensions. Specific dimensions have now been provided.

2.3. In addition to standard planning application plans and particulars the original application to Leitrim Co. Co. was accompanied by:

- An 'Environmental Impact Assessment Report' (EIAR) prepared by Jennings O'Donovan & Partners Ltd., Consulting Engineers (Jennings O'Donovan) and dated December 2020 comprising:
 - Volume I: Main Report
 - Volume II: Appendices
- A 'Landscape and Visual Assessment Figures' booklet prepared by Jennings O'Donovan (undated).

2.4. Section 2.8 of the grounds of appeal cover document states that the existing wind farm has 15 no. Enercon E70 turbines each with a capacity of 2.3MW and an overall height of 99.5 metres. This is reiterated in section 2.2.1 of the EIAR. This implies a current output of 34.5MW. Table 6.1 (Current and planned onshore wind developments, date and capacity) of appendix IX Part A (Renewable Energy Strategy) of the Draft Leitrim County Development Plan 2023-2029 provides an output of 32.803MW for the existing wind farm with an additional 16MW from the permitted development P.A. Reg. Ref.

19/26. Including the proposed 20MW output of the application under consideration the total windfarm output would be up to 70.5MW.

- 2.5. The applicant is a local wind energy development company, the directors of which have been involved in renewable energy projects since 1998 and are 'well established independent developers and operators' of renewable wind and hydro energy projects in the north west of the country. The annual carbon dioxide offset is estimated to be approx. 27,078 tonnes a year and 168 tonnes of nitrous oxides and 561 tonnes of sulphur dioxide would also be offset annually. As part of the further information response to the Board's further information request the applicant 'confirms that either the Vestas V-126 or Enercon E-126 are the candidate turbines', each with a capacity of approx. 5MW. T16, T17, and T23 are to be connected to the national grid via an approx. 9.5km long 20kV underground grid connection to Corderry 110kV station. 'The works required to install the cable and works to the 110kV Corderry electrical substation are identified, described, and assessed in (the) EIAR' (page 2-13 of the EIAR). T22 is to be connected to the national grid via a substation permitted under P.A. Reg. Ref. 19/26, approx. 1km south of T22. That substation also connects to the Corderry 110kV substation but via a different public road network to that proposed and which runs to the south of Belhavel Lough. Drawing No. P-900 illustrates the various grid connection routes.
- 2.6. The proposed turbine would be of typical modern design with a three blade rotor. Page 2-14 of the EIAR (as per the further information response to the Board's further information request) states 'The main turbines considered, and which are identified, described and assessed in this EIAR, is the Enercon E-126'. The further information response cover letter states that a Vestas V-126 may also be used but 'both turbines have similar properties and are in accordance with the turbine parameters outlined under the revised description of development'. According to the EIAR, blades would begin to rotate at a wind speed of approx. 2.5 metres per second (m/s) and would cut out at speeds between 28m/s-34m/s. Full power output would be reached at 10m/s-12m/s with the rotor operating at between five and fifteen revolutions per minute.
- 2.7. Approx. 927 metres of new and 1,570km of upgraded access tracks are proposed which would have approximate widths of 5 metres. All materials would be imported.

- 2.8. The proposed 20kV substation is located approx. 220 metres south east of T16. It has a floor area of approx. 42sqm and a height of 4.95 metres. It is to be externally finished in plaster with a blue/black slate roof. The proposed harmonic filter container units are to be located in a compound approx. 110 metres north west of existing T4. They are approx. 27sqm in floor area with heights of 3.05 metres and are to be finished in grey corrugated sheeting.
- 2.9. The underground grid connection cable network would be installed in trenches approx. 0.6 metres wide and 1.2 metres deep. It is envisaged this would be transferred to ESB Networks post-construction.
- 2.10. It is stated that there are 30 no. inhabited houses within 2km of the proposed turbines, the closest of which (H13) is approx. 926 metres from T23. It is envisaged the construction phase would last approx. 12-18 months. There would be approx. 50 no. construction workers at peak. It is proposed to locate the temporary construction compound adjacent to existing T6.
- 2.11. A comprehensive further information request was issued by the planning authority on 21st May 2021 and a detailed response was received on 19th November 2021. On 23rd November 2021 the planning authority decided that the further information response contained significant additional data and requested revised public notices. The revised notices were received by the planning authority on 1st December 2021. The further information response included the following:
- a 'Chapter 6.0 Soils and Geology – Peat Slide Risk Assessment' prepared by Whiteford Geoservices Ltd. and dated 14th November 2021.
 - a 'Landscape and Visual Response in respect of a Request for Further Information' prepared by Macroworks and dated July 2021.
 - a 'Response to Request for Further Information' relating to biodiversity prepared by Doherty Environmental Consultants Ltd. and dated November 2021.
 - a 'Construction Environmental Management Plan' (CEMP) prepared by Jennings O'Donovan and dated November 2021.
 - a 'Response to RFI and Proposed Methods (Hydrology & Hydrogeology)' prepared by Minerex Environmental Ltd. and dated 18th November 2021.

2.12. The decision by Leitrim Co. Co. to refuse permission was made on 2nd February 2022.

2.13. The first party appeal was received by the Board on 1st March 2022. The Board sought further information on 15th August 2022. The further information response received on 5th September 2022 included the following:

- an updated EIAR biodiversity chapter, figures, and appendices,
- an updated project description (i.e. a revised/updated EIAR Chapter 2),
- revised planning drawings.

3.0 Planning Authority Decision

3.1. Decision

3.1.1. Leitrim Co. Co. refused permission for the following reasons:

1. Having regard to the ground conditions on the site, and to the history of landslides in the wider general area, on the basis of the information submitted, the Planning Authority is not satisfied that the applicant has adequately demonstrated through the submission of sufficient robust information that the proposed development could not result in a peat landslide from occurring which would have significant and adverse effects on the receiving environment. In particular, it is considered that the submitted Peat Landslide Hazard and Risk Assessment and follow-on report fails to clearly demonstrate using qualitative assessment, or other appropriate means which would be sufficiently robust, that the peat conditions at the subject site are different and more stable than the site of the nearby Shass Mountain failure and that the extent of significant environmental impact occurring from a failure have been adequately considered. The Planning Authority is not therefore satisfied that the environmental impacts arising from the potential of a peat landslide occurring have been adequately considered and mitigated against. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

2. The Planning Authority is not satisfied on the basis of the information submitted with the application, including the Natura Impact Statement and Environmental Impact Assessment Report, that the proposed development individually, or in combination with other plans or projects would not be likely to have a significant effect on the ability of Boleybrack Mountain SAC to achieve its conservation objectives. Insufficient consideration has been given to assessing potential in-combination and cumulative effects that may arise between the proposed development and existing drainage and other infrastructure and/or consented projects. The Planning Authority is not therefore satisfied that the proposed development individually, or in combination with other plans or projects would not adversely affect the integrity of the Annex habitat and or disturbance of Annex species in the context of the Habitats Directive Article 17 reports, and the report on Article 12 of the Birds Directive. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.
3. The planning authority is not satisfied on the basis of information submitted with the application that the proposed development in combination with other plans or projects would not be likely to have a significant adverse effect on the environment, having regard to the possible construction of all 8 no. wind turbines (4 no. proposed and 4 no. previously permitted) in combination or in close sequence, where consideration throughout the submitted EIAR in assessing the cumulative impacts that may arise between the proposed development, the existing windfarm, existing drainage and other infrastructure and consented projects, is considered incomplete. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

3.2. Planning Authority Reports

- 3.2.1. The first planning authority Planning Report is a detailed document which comprises, inter alia, an overview of the proposed development, the policy framework, the content of the submitted EIAR, Appropriate Assessment (AA), and includes a planning and sustainable development assessment. The report concludes that the planning authority 'welcomes this proposal in principle, however there are a number of details

which will require addressing in advance of any decision on this planning application’, in particular issues related to the EIAR and NIS. A substantial further information request was recommended.

- 3.2.2. The second planning authority Planning Report is based on the further information response. The report notes the updated reports and additional third party submissions received. The applicant’s further information response is set out and the planning authority’s response to each issue is outlined. The EIA section of the second report has been amended in parts from that set out in the first Planning Report. In relation to AA, the conclusion of this section of the planning report is informed by the position of the Dept. of Housing, Local Government and Heritage. The updated planning and sustainable development assessment section includes the key findings of the RPS report on the further information response (see sections 3.2.3-3.2.5 below). The planning report includes a detailed conclusion which, while accepting of the principle of wind turbines in the general vicinity of the site, considers that ‘there are a number of specific issues of concern which have not been addressed adequately ... and as a result the Planning Authority are not satisfied that the proposal would not be detrimental to the proper planning and sustainable development of the area’. The reports from RPS, the Dept. of Housing, Local Government and Heritage, and the planning authority’s Environment Dept. are all referenced in the conclusion. The planning authority ‘is of the opinion that insufficient information has been submitted to allay a number of concerns ... and as a result the Planning Authority is not satisfied that the proposal would adhere to the proper planning and sustainable development of the area’. A refusal was recommended for the three reasons as per the decision.

Other Technical Reports

- 3.2.3. **RPS Group (RPS) on behalf of Leitrim Co. Co.** – A ‘Geotechnical Review of Peat Landslide Hazard Risk Assessment’ was prepared by RPS and is dated 13th May 2021. Page 1 states RPS was engaged by the planning authority to undertake a geotechnical review of the Peat Landslide Hazard and Risk Assessment as submitted by the applicant. The brief was to assess the applicant’s document ‘against relevant guidance and determine whether it is sufficiently robust to support the conclusions drawn within’.

- 3.2.4. The review document deemed the applicant's document had 'a number of shortcomings throughout and reworking is required ...' It also concludes 'A more definitive and in depth assessment of peat stability at Tullynamoyle is considered necessary give [sic] the required confidence that the subject site is suitable for the proposed development'.
- 3.2.5. On foot of the further information response, a 'Review of Further Information on Peat Landslide Hazard Risk Assessment' was prepared by RPS, dated 7th January 2022. The RPS report identified four key findings: (1) peat conditions along the underground cable route to Corderry 110kV substation have been assessed for less than 1.5km, (2) to avoid a reoccurrence of the Shass Mountain failure the qualitative assessment methodology needs to be sufficiently robust that it would allow the adverse peat conditions at the failure site to be clearly identified, (3) it needs to be demonstrated that the peat conditions are different and more stable than at Shass, (4) the Shass Mountain failure travelled 5km downstream but the applicant has only used a 300 metres travel distance.
- 3.2.6. **District Engineer** – Recommendations for strengthening etc. of roads during construction and other observations made e.g. maintenance of ducts in public roads, relevant consultation with District Engineer, and construction of haul route before works start.

A report on the further information response states that the recommendation of the previous report is to be conditioned into the planning permission.

- 3.2.7. **Environment Department** – A detailed report was prepared on foot of the planning application. The report initially notes that 'This type of development has to be welcomed in so far as it will further reduce the emissions of 'Green Houses Gases' from energy production'. Concern is expressed about the potential for landslides in the area. A number of comments, observations, and recommendations are made in relation to landslides, water quality, noise, liaison with stakeholders and state agencies, and construction and demolition waste. Suggested conditions for any grant of permission are included in the report.

Two separate reports were prepared on foot of the further information response.

26th January 2022 – The department is concerned that insufficient consideration has been given to assessing the cumulative effects that may arise between the proposed

development and existing drainage infrastructure, existing developments, and consented projects and the EIAR may not be compliant with legal requirements. The EIAR lacks completeness and quality. Use of vague statements such as 'where possible' and 'strongly recommended', are inadequate. The department remains concerned about the potential effects of the proposed development on peat stability, associated risk of landslides, and subsequent effects on habitats and water quality.

31st January 2022 – This report was prepared by the same Senior Executive Engineer as the report of January 26th. In addition to issues raised in the previous report, no EIAR or NIS has been undertaken assessing the environmental impact of all eight consented and proposed wind turbines, constructed in combination or in close sequence. Repeatedly passing responsibility for implementing mitigation measures to the contractor, and use of vague terms, does not alleviate the department's concern.

The further information responses do not fully provide the necessary information and a refusal is recommended. The report includes reasons why the response is not fully complete.

3.2.8. **Water Services Department** – No comment.

3.2.9. **Taking in Charge Section of the Planning Department / Access Officer** – No objection subject to satisfying standard planning assessment criteria. Additional comments also made.

3.3. **Prescribed Bodies**

3.3.1. **An Taisce** – An email dated 4th May 2021 was submitted to the planning authority on foot of the planning application. (1) Reliance on inadequate 2018 data does not allow for a sufficient assessment of potential impacts to bird species in the area. (2) It is crucial that the Council are satisfied that the proposed extension would not cause peat slides or bog bursts. (3) The Council must be satisfied that the proposal would not result in any water quality deterioration in the surrounding waterbodies.

3.3.2. **Irish Aviation Authority (IAA)** – Similar reports were received by the planning authority on 15th December 2021 and 14th February 2022. They state that the Air Navigation Services Division does not get involved in the planning process and outline requirements for certain developments.

3.3.3. **Transport Infrastructure Ireland (TII)** – A report dated 26th April 2021 was received by the planning authority on foot of the planning application. (1) The proposed development shall be undertaken in accordance with the recommendations of the Transport (Traffic) Assessment and Road Safety Audit submitted. (2) Consult with the relevant road authorities on any works proposed that affect the national roads and associated junctions. (3) Prior to commencement of development a full assessment of structures on national roads on the haul route shall be undertaken to confirm that all structures can accommodate the proposed loading.

Subsequent correspondence dated 13th December 2021 states the authority's position remains as set out above.

3.3.4. **Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media** – An email dated 30th April 2021 was received by the planning authority which related solely to archaeology. It stated that archaeological monitoring should be included as a condition of any grant as recommended in the EIAR.

3.3.5. **Department of Housing, Local Government and Heritage** – A detailed report was received dated 14th January 2022 with various headings. It can be summarised as follows.

Nature Conservation – The department 'is concerned that the proposed development is likely to affect the ability of the Boleybrack Mountain SAC to achieve its conservation objectives ... because the (NIS) does not clearly eliminate hydrological (surface water and ground water) connectivity of QI Peat based habitats to the development site. Furthermore, the effects of altering downslope watercourses, ground water and surface water flows in close proximity to protected peat based habitats in the Boleybrack Mountain SAC are not sufficiently mitigated'.

In terms of peat stability, and notwithstanding the further information response, the department 'remains concerned about the potential effects of the proposed development on peat stability and associated risks to the dependant upslope habitats (i.e. Boleybrack Mountain SAC QI) and protected downstream habitats and species (e.g. Lough Gill SAC (site code: 001976)'. The report expands on the reasons for this.

Concern is expressed at the permanent loss of modified blanket bog habitats and acid wet grassland and the effect on the ability of Boleybrack Mountain SAC to achieve its conservation objectives.

The department is concerned that the loss of Annex habitat and/or disturbance of Annex species are not considered in the context of Article 17 or 12 reports and any proposed losses should be placed in the national context.

The department is concerned that references to hen harrier in the EIAR non-technical summary (NTS) is at odds with the evidence presented in the EIAR and exhibits a fundamental misunderstanding of the ecology of the species. Notwithstanding, the revised design is welcomed with regard to hen harrier, but concerns remain. The department is also concerned by findings which suggests the existing wind farm has changed the behaviour of hen harrier, red grouse, and golden plover 'and the apparent lack of an assessment of in combination effects to these species with reference to baseline data from the original Tullynamoyle 5 project'. Data in the EIAR indicates the site of T17 is within a core hen harrier breeding area.

The report outlines concern in relation to assessing cumulative and in combination effects in terms of both a creeping reference baseline/original survey data and that insufficient consideration has been given to assessing in combination and cumulative effects that may arise between the proposed development and existing drainage infrastructure (e.g. bog roads, drains), developments (e.g. existing turbines, forestry), and/or consented projects (e.g. the four permitted turbines).

Comment is made in relation to mitigation. Changes to hydrology must be clear in the NIS.

The absence of any bat activity at T16, T17, and T22 during the spring 2020 monitoring session is surprising and should be accounted for. No evidence of otter was identified. The department is concerned that no evidence of otter surveys downstream and in the vicinity of grid connection route crossings, where the EIAR suggest better foraging habitat occurs, has been provided. Impact to otter can occur at considerable distance from works locations and surveys must establish the presence/absence of otter in all areas that may be affected because an assessment of potential effects must contain clear and concise findings and no lacunae.

Certain monitoring proposals are recommended for bird species and aquatic species on the Aghameelta river and Tullinwillin river, and monitoring of peat stability and water quality.

The department is concerned that no comprehensive decommission plan accompanies the application which outlines in detail how the effects of the proposed development will be fully reversed in nature. There is inadequate information in the EIAR and NIS to support the conclusion that decommission works will not have an adverse effect on the environment, biodiversity, peat stability, drainage, and eco-hydrology.

Observations in the report are not exhaustive and are made without prejudice to any future recommendation.

3.4. Third Party Observations

3.4.1. 15 no. submissions were received by the planning authority on foot of the planning application, including from a group called Leitrim Wind Energy Awareness, and from two councillors. Not all submissions were provided to the Board by the planning authority but those not provided were available to view on the planning authority's website. Many issues raised are largely covered by the observations received on the grounds of appeal e.g. landslides, biodiversity, environment, visual impact, tourism etc. with the exception of the following:

- Noise from the existing turbines
- No up-to-date guidelines / size of the turbines
- No public consultation
- Concern about shadow flicker / mental health
- EIAR does not adequately address Boleybrack Mountain SAC
- Cumulative effects have not been adequately addressed
- Inefficiency of wind turbines and reliance on government subsidies
- Decommissioning and recycling process is not adequately addressed
- Project splitting
- Hydrological impact

3.4.2. Eight observations were received by the planning authority on foot of the revised public notices as part of the further information response, including from Leitrim Wind Energy

Awareness, and from one councillor. The issues raised are largely covered by the observations received on the grounds of appeal, and the observations received on foot of the original planning application, with the exception of the following:

- The further information does not adequately address the points in previous submissions.
- The four permitted turbines should be reconsidered as their permission predates the landslide.
- A decision should be deferred until publication of Stage 2 of the Shass Mountain Peat Landslide Factual Report.
- One submission raises a number of concerns relating to, inter alia, the failure to construct the four permitted turbines, the piecemeal nature of applications, the developer's future plans, the content of biodiversity reports, the EIAR and NIS, and photographs. The submission was accompanied by correspondence from Leitrim Tourism and 'a growth strategy for tourism in Leitrim 2015-2021' document.

4.0 Planning History

4.1. The relevant planning history appears to be as follows:

P.A. Reg. Ref. 05/691 / ABP Reg. Ref. PL 12.218384 – In 2008, permission was granted for a wind farm consisting of six turbines of hub height 65 metres and rotor diameter of 70 metres, a control building, two car parking spaces and associated site roads and site works (T1 – T6)

P.A. Reg. Ref. 12/37 – In 2012, permission was granted for an increase in generating capacity of the wind farm permitted under Planning Ref. 05/691 / PL 12.218384 from 9MW to 13.8MW (T1 – T6)

P.A. Reg. Ref. 13/52 – In 2013, permission was granted for an extension to the existing wind farm permitted under 05/691 consisting of six wind turbines with a hub height of up to 64 metres and a rotor diameter of up to 71 metres, hardstandings, an electrical

compound and substation building, associated site roads, drainage and site works (T7 – T12).

P.A. Reg. Ref. 15/93 – In 2015, permission was granted for the erection of two turbines (foundations, roads and hardstands already constructed) previously granted permission under Planning Ref. 05/691 / Ref: PL 12.218384, (four turbines already commissioned) and upgrade of an existing forest track, approximately 70 metres in length, in order to extend the completion time needed. (T2 and T5).

P.A. Reg. Ref. 15/164 – In 2016, permission was granted for a three turbine extension to a permitted wind farm development consisting of 12 no. turbines. The overall development will consist of 15 turbines. The three wind turbines will have a hub height of 64 metres and a rotor diameter of 71 metres, hardstandings, 20kV electrical substation building, underground grid connection (approximately 7.3 km in length), one stream crossing, associated site roads, drainage, and site works. (T13 – T15).

P.A. Reg. Ref. 19/26 – In 2020, permission was granted for a thirty year planning permission for an additional four wind turbines to an existing 15 no. turbine wind farm comprising four wind turbines with hub heights of up to 92 metres with an overall height of up to 150 metres to blade tip, crane hardstand areas, two 20Kv substation buildings with associated electrical plant, equipment and security fences, underground cabling, new site access tracks and the provision of upgraded access roads, underground grid connection approximately 5km in length predominantly along existing public road network etc. (T18 – T21).

4.2. A pre-planning consultation on 4th December 2020 is referenced in Item 19 of the planning application form but no reference number is provided.

4.3. The EIA Portal ID is 2021055.

5.0 Policy Context

5.1. Climate Action Plan 2023 – Changing Ireland for the Better

5.1.1. The plan is the second annual update to Ireland’s Climate Action Plan 2019. This plan is the first to be prepared under the Climate Action and Low Carbon Development

(Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emissions ceilings.

- 5.1.2. The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve Ireland's emissions by 2030 and reach net zero no later than 2050, as committed to in the Programme for Government. It sets out how Ireland can accelerate the actions that are required to respond to the climate crisis, putting climate solutions at the centre of Ireland's social and economic development.

5.2. **Project Ireland 2040 National Planning Framework (NPF)**

- 5.2.1. The NPF is a high level strategic plan to shape the future growth and development of the country to 2040. It is focused on delivering 10 National Strategic Outcomes (NSOs). NSO 8 is 'Transition to a Low Carbon and Climate Resilient Society' and it is expanded upon on page 147 of the NPF. There is a national objective of achieving transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050. 'This objective will shape investment choices over the coming decades in line with the National Mitigation Plan and the National Adaptation Framework. New energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system, harnessing both the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and connecting the richest sources of that energy to the major sources of demand'.
- 5.2.2. National Policy Objective (NPO) 55 states 'Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050'.

5.3. **Wind Energy Development Guidelines for Planning Authorities (2006)**

- 5.3.1. The guidelines provide advice on wind energy development in terms of the development plan and development management processes. Guidance is given on matters such as noise, shadow flicker, natural heritage, archaeology, architectural heritage, ground conditions, aircraft safety, and windtake. Chapter 6 provides guidance on siting and design of wind energy development in the landscape. This

includes advice on spatial extent and scale, cumulative effect, layout, and height of turbines.

5.4. Draft Revised Wind Energy Development Guidelines (2019)

5.4.1. These provide for an update and review of the 2006 guidelines.

5.5. Northern & Western Regional Assembly Regional Spatial & Economic Strategy (RSES) 2020-2032

5.5.1. A relevant section of the RSES is 'Renewable Energy and Low Carbon Future' (pages 162-167). This includes policies supportive of renewable energy developments e.g. Regional Policy Objectives (RPO) 4.17 and 4.18.

5.6. Leitrim County Development Plan 2015-2021 (as varied and extended)

5.6.1. On July 4th 2022, Leitrim County Council decided to extend the duration of the existing Leitrim County Development Plan 2015-2021 (as varied) up to the 31st March 2023. There is currently a Draft Leitrim County Development Plan 2023-2029.

5.6.2. Under section 4.11.4 (Electricity Generation and Transmission) the plan states 'The Council recognises the potential of the County for generating electricity by means of windfarms and is favourably disposed towards their development subject to the protection of the environment and visual amenity. The Landscape Character Assessment gives guidance on the integration of wind farms into the landscape'.

5.6.3. Wind farms are referenced in section 4.11.5 which states, inter alia, 'The Council acknowledges the role of wind energy in; reducing the reliance on non renewable sources of energy, reducing the dependency on imported fuels and in moving towards a 'low carbon' society. The Council is also aware of the environmental impacts associated with windfarms and the public concerns raised in respect to such developments. Whereas the Council is disposed towards the development of windfarms, strict development management measures will operate and the Council will only permit such developments where it can be clearly demonstrated, to the satisfaction of the Planning Authority, that such developments are in accordance with National and Regional Guidance and in particular the criteria set out herein'.

5.6.4. Section 4.11.5 also states that ‘development that can clearly demonstrate, to the satisfaction of the Planning Authority, that they would not have a significant adverse impact on the amenities of a dwelling or a building occupied, or capable of being occupied, by people, or would not compromise the integrity of an environmentally sensitive area, will be ‘open for consideration’.

5.6.5. Wind farm development is also addressed in section 5.4.8 of the plan.

5.7. Draft Leitrim County Development Plan 2023-2029

5.7.1. There is currently a Draft Leitrim County Development Plan 2023-2029. Wind energy is addressed in section 12.6.2. The proposed turbine locations are generally in an ‘available area’ in Appendix IX Part A (Renewable Energy Strategy), but this does not correspond with ‘acceptable in principle’ status for wind energy.

5.8. Natural Heritage Designations

5.8.1. Boleybrack Mountain SAC (site code 002032) is immediately adjacent to the north/east/south of proposed Ts 16, 17, and 23, and the proposed substation, and is approx. 400 metres north of proposed T22 at its nearest point. The closest national heritage area to any proposed turbine is Boleybrack Mountain pNHA (site code 002032) approx. 2.8km to the north east of T23.

6.0 The Appeal

6.1. Grounds of Appeal

6.1.1. The grounds of appeal are submitted by Jennings O’Donovan on behalf of the applicant, Tullynamoyle Wind Farm 5 Ltd. The main points made can be summarised as follows:

First Reason for Refusal

- Whiteford Geoservices Ltd., (WGS) who prepared the detailed and robust assessment, are competent experts. A rebuttal document and revised report

have been submitted. The focus of the RPS report is on Shass Mountain rather than the appeal site in its own right.

- A blanket bog landslide occurred on Shass Mountain on 28th June 2020 approx. 1.2km upstream of the Dawn of Hope Bridge. WGS has set out a response to each of the items raised by RPS. Inter alia, WGS considers that Shass Mountain would have been between 1.7 and 3.4 times more likely to fail than the most sensitive element of the proposed wind farm extension. The Tullynamoyle layout was adjusted to avoid all medium risk categories. The Shass landslide was a natural event.
- Minerex Environmental has also provided a response to each reason for refusal. This states that ‘the low risk classification at the site indicates that any potential stability issues at the site will likely be localised’. Potential impacts through construction works, erosion, and hydrology are identified, as are mitigation measures, described in chapter 7 of the EIAR.
- The issue of peat slide stability did not arise in previous Tullynamoyle wind farm applications and the fact the existing site is earmarked for potential expansion in the Draft Plan would be contrary to the reason for refusal.

Second Reason for Refusal

- This reason for refusal appears to be based on the Department of Housing, Local Government and Heritage response. Table 4.1 sets out a detailed response to that submission which should be read along with the revised biodiversity chapter and revised NIS as submitted with the grounds of appeal. Responses include:
 - Hydrology – Concerns addressed in the revised NIS and biodiversity chapter.
 - Peat stability – It is correct to say the average depth of peat recorded with a 100sqm area of each proposed turbine did not exceed 1 metre, it is an average depth. T16 and T17 are at lower elevations than Boleybrack SAC with maximum gradients in the 5° to 10° range and not the 10° to 22.5° range as quoted. A geotechnical analysis found the hazard ranking associated with the turbines is low risk. The appellant

can mitigate against any increase in the sensitivity of the existing lands caused by construction but risks present within the natural environment will still remain, though the layout has been adjusted to minimise this.

- Water quality – Best practice mitigation measures have been included in the EIAR, NIS, CEMP, and Surface Water Management Plan (SWMP). The potential for a peat slide to occur at T23 has been classified as low risk. Notwithstanding, further mitigation has been prescribed to prevent a peat slide and the discharge of polluted waters to the Skeanada/Lough Gill. EIAR mitigation measures are conceptual and will be applied by the further development of the SWMP.
- Water quality post-mitigation – The hydrology chapter concludes the residual impact is neutral. This is now detailed and clarified within the EIAR, NIS, other documents, and table 4.1.
- Loss of habitat – The NIS and biodiversity chapter have been updated to address concerns raised in relation to loss of modified bog habitat and acid wet grassland, use of existing trackways, and new trackways.
- Annex I habitats – The NIS and biodiversity chapter have been updated to place proposed losses in the national context.
- Non-technical summary (NTS) – The NTS was not drafted by the project ecologist. It has been amended to ensure consistency with the EIAR.
- Hen harrier – The biodiversity chapter has been updated with regard to hen harrier. T16 and T17 were withdrawn from a previous planning application as there were indicative results in 2019 of hen harrier breeding within 500 metres of T17. However no such observations were made in the 2020 (possible breeding was observed approx. 850 metres west of T17) or 2021 breeding seasons; Surveyed flightlines between 2017 and 2021 indicate a reduced level of activity within the boundary of the wind farm. However, the population of breeding hen harrier within the 10km² square has increased in recent years, indicating that the wind farm is not undermining an increase in the local population. A central polygon encompassing the location of the observations of the 2019 breeding pair and possible 2020 breeding pair has been used to identify

the core breeding area. The updated biodiversity chapter refers to hen harrier habituation with turbines only in the context of the observed flight activity which suggests they avoid flying close to them.

- Golden plover and red grouse – The suggestion that the absence of golden plover or red grouse from flight activity in the vicinity of the wind farm indicates the wind farm has changed their behaviour is not supported by the baseline information in the biodiversity chapter. Figure 5.39 shows the location of all previous records for the two species, gathered between 2003 and 2015 from initial wind farm surveys and National Parks and Wildlife Service (NPWS) surveys. No additional records were recorded during surveys between 2017 and 2021. The previous records were from locations relatively remote from the wind farm and proposed turbines and the existing wind farm is located in habitat unsuitable for the species. It is unlikely the proposed development will result in a change of behaviour or territories occupied.
- Cumulative impacts (habitats) – Baseline conditions are not assumed. The existing peatland habitats have been modified through inappropriate land use activities. The biodiversity chapter has been updated to further consider the cumulative effect of the wind farm with the past land use activities. Existing bog roads and tracks associated with the existing wind farm were previously assessed as not having potential to result in significant negative impacts to habitats or fauna. Existing drainage within the SAC in the vicinity of T16 has undermined the active status and thus the favourable conservation status of blanket bog habitat. The infrastructure associated with the proposed extension will not have the potential to result in further drainage/water drawdown due to the presence of existing features that function as a break in the peat substrate between the proposed development and peatland habitat e.g. existing drains and access road, as well as the distance between proposed infrastructure and peatland qualifying interests (QI).

A detailed examination of the habitats occurring has been detailed in the biodiversity chapter and the NIS. There is an absence of connectivity between the peatland habitats occurring within the proposed

development footprint and the SAC. The connectivity is broken by existing drainage features that function as a hydrological break, by the existing access road cut into the peat substrate and founded on bedrock which forms a barrier break, and distances.

- NIS language – Vague language such as ‘where possible’ and ‘strongly recommended’ has been removed.
- Bats – The habitats occurring are overall of low suitability for all bat species. The biodiversity chapter has been updated to include reference to bat survey data collated for all of the wind farm planning applications. The combined results indicate that bat activity was consistently low, including a null result in 2012. The low bat activity in the area is likely to be related to the exposed upland environment that represents unsuitable foraging habitat for bats.
- Otter – Evidence of otter surveys is provided in the biodiversity chapter. All watercourses crossed by the proposed access road and proposed grid connection route have been surveyed.
- A response prepared by RSK is included as appendix F. The extensive artificial drainage associated with turbary activities at the site within the SAC, including within areas of modified (active) blanket bog, must be noted. This also occurs outside and downgradient of the SAC. T16 and T23 are in areas of modified (active) blanket bog and cutover/degraded bog blanket and other peatland areas that have been heavily modified with extensive drainage networks. The most significant new impact proposed within the SAC is a portion of an access track south east of T17 and there are also small portions of hardstanding within the SAC in the proximity of T17. No habitat in this general area is associated with annex I habitats.
- A photographic survey has been submitted (appendix J). The in-situ roads and tracks contradict some departmental concerns and provide evidence of little disturbance.
- The Draft Leitrim County Development Plan supports the proposed wind farm extension.

Third Reason for Refusal

- An appropriate level of information has been provided in the EIAR relating to cumulative impact assessment. A comprehensive list of plans and projects was considered throughout the EIAR and is provided in chapter 2. A cumulative impact assessment was provided within each EIAR chapter, based on the information provided in chapter 2. When mitigation measures are deployed adequately and the development is managed appropriately, the development will not contribute to any significant extent to cumulative impacts on the receiving environment.

Selected Appendices

Appendix C – ‘Chapter 6.0 Soils and Geology – Peat Slide Risk Assessment Response to Planning Refusal Ref: P21-57’, prepared by WGS and dated 25th February 2022. (Rebuttal Statement).

Appendix D – ‘Chapter 6.0 Soils and Geology – Peat Slide Risk Assessment’, prepared by WGS and dated 25th February 2022. (Revised Peat Slide Risk Assessment).

Appendix E – A revised EIAR Chapter 5 (Biodiversity) prepared by Doherty Environmental dated February 2022.

Appendix F – ‘Tullynamoyle WF Ext. Refusal Response re. Hydrology & Hydrogeology’, prepared by Minerex Environmental and dated February 2022. (Rebuttal Statement).

Appendix G – ‘Screening Report for Appropriate Assessment’ and ‘Natura Impact Statement’ prepared by Doherty Environmental Consultants Ltd., both dated February 2022.

6.2. Planning Authority Response

6.2.1. The main points made can be summarised as follows:

- The planning authority acknowledges that there has been a further walkover and findings and the report and associated Peat Slide Hazard Rankings have been reviewed and updated, and that risk mapping in relation to indicators of instability are contained within the report resubmission. It is also noted that a

detailed response to the department's submission has been made, including an updated NIS, updated biodiversity and hydrology chapters in the EIAR, and the NTS text has been amended.

- It is acknowledged that the appellant has attempted to address each reason for refusal by way of further expansion on the issues and the introduction of new material. The planning authority does not consider their role is in the re-assessment of the considerable amount of new information. The planning authority relied heavily on submissions from external bodies such as the department.
- The Board should satisfy itself of the merits or otherwise of the expansion of the issues and introduction of new material.

6.3. Observations

6.3.1. Observations were received to the grounds of appeal from the following:

1. Teresa McVeigh, Lisacoghill, Drumkeeran, Co. Leitrim, N41 DC90 (approx. 3.5km south of the existing windfarm).
2. Leitrim Wind Industry Awareness, c/o Adrienne Diamond, Beagh, Dromahair, Co. Leitrim, F91 KD73.
3. Fáilte Ireland
4. Irish Aviation Authority

The main issues raised in each submission can be summarised as follows:

6.3.2. Teresa McVeigh

- Unacceptable risk to/of: (i) the environment (ii) landslides and resulting pollution (the observer's family farm at Lisnanorris was destroyed by the Shass Mountain bog slide), (iii) Boleybrack Mountain SAC, (iv) biodiversity.
- The proposed site is a designated area of outstanding beauty and according to the County Development Plan it should be protected.
- Peatlands are valuable carbon sinks.

- The development would not create long-term sustainable employment or encourage rural regeneration.
- Decrease property prices.
- Unacceptable increase in construction traffic.
- Excessive number of wind farms already in the area.
- It is the observer's understanding that studies and assessments relating to the Shass bog slide are continuing. The bog slide also affected biodiversity, waterways, and heritage.
- Turbine heights have been gradually increased.
- An excerpt is provided from a scientific review in December 2010 which references construction work on peatlands and impact on bird species.
- Bird species and the SAC should be protected.

6.3.3. Leitrim Wind Energy Awareness

- The planning authority has granted permission for wind farms in the general area in the past but has decided in this case that there are strong grounds for refusal.
- The department's submission pinpoints numerous flaws in the application.
- The recent Sweetman v Bord na Mona ruling should be considered as adequate specific details on the turbine designs have not been provided.
- The Board is asked to consider the environmental and economic cost of a potential landslide, the fact the turbines are larger than the existing turbines, and the history of landslides in the area. The observers query the risk.
- Water quality needs to be protected.
- Boleybrack SAC is of great importance. Concern about impact on bird species.
- If the development is granted the County Development Plan has failed on Policies 1 (protect ecological networks linking protected and designated important sites) and 2 (to permit development in an Area of Outstanding Natural Beauty where the planning authority is satisfied that it is not practicable to

develop in a less-sensitive location and will not impinge in any significant way on the landscape).

- Leitrim is already making a positive contribution to National Strategic Policy on renewable energy. The landscape has reached full capacity for wind energy developments. The demand for renewable energy has to be balanced with the biodiversity crisis.
- The removal of vague language from the NIS does not increase the scientific or quantifiable effects of the information.

6.3.4. Fáilte Ireland

- As the Irish landscape is one of the primary reasons for visiting the country, it is essential that the quality, character, and distinctiveness of this valuable resource is protected.
- The site is within the Hidden Heartlands Region. The profile of recreation activities in the area is landscape-based. A key focus is to develop the River Shannon and Shannon-Erne. The Leitrim Way section of the long-distance Beara Breifne Way is approx. 4-5km east of Boleybrack Mountain. It is important to consider the significance of visual impacts on potential amenity value such as use of Lough Allen, the Shannon, and the upland landscape for leisure. Given this, potential changes in landscape character should be considered.
- Reference is made to landscape commentary in the Draft County Development Plan.
- Fáilte Ireland respectfully request that the potential for impacts on the tourism and amenity value of the area be given due consideration.

6.3.5. Irish Aviation Authority

- The Air Navigation Services Division (ANSD) does not get involved in the planning process.
- The ANSD is to be notified of certain matters e.g. prior notification of manmade objects in the vicinity of aerodromes or erection of any manmade object in

excess of 45 metres anywhere in the state, and provision of certain data in relation to turbines (coordinates, heights, lighting etc).

6.4. Further Responses

6.4.1. As noted in sections 2.1 and 2.13 of this inspector's report, the Board issued a further information request on 15th August 2022. The applicant's response was received on 5th September 2022. It comprised a revised and updated EIAR chapter 2 (Project Description) which addressed concerns in relation to the specific type and dimensions of the proposed turbines subject of the planning application. This is expanded upon in section 8.4 (Turbine Type) of this inspector's report. It also included a revised and updated EIAR chapter 5 (Biodiversity) which addressed concerns relating to the presentation of chapter 5 in the grounds of appeal. This is expanded upon in chapter 5 of section 9 (Environmental Impact Assessment (EIA)) of this inspector's report.

6.4.2. The Board received additional submissions on foot of the further information request and response. Some issues raised were contained in previous submissions and are not repeated e.g. AA, landslide. The main issues raised in each submission received can be summarised as follows:

6.4.3. Teresa McVeigh

- The response does not cover the Board's concerns and a refusal is requested.
- Updated EIAR chapter 5 states the population of breeding hen harrier has increased in the relevant 10km² area despite the presence of the existing 15 no. turbine wind farm. However there is no way of knowing what effect the four permitted larger turbines will have on protected birds and bats, and the proposed turbines are larger again.
- Examples of reports/articles on the dangers of constructing wind farms for birds and bats are provided. As turbines get larger it is presumed they would have deeper foundations. Excavation depth is not provided. Deeper excavations would have a profound effect on flora and fauna.
- Construction phase damage to ecology/the SAC is not acceptable. Chapter 2 of the EIAR states the SAC is crossed in two locations, for the most part by

existing trackways. Upgrading these tracks will do irreparable damage to the SAC.

6.4.4. Leitrim Wind Industry Awareness

- The information supplied does not fully address the Board's points and a refusal is requested.
- Discrepancy between Drawing No. P-400-2 (126 metres rotor diameter) and section 2.2 and table 2.1 of the revised EIAR which cite a rotor diameter of 127 metres. The rotor hub height and maximum turbine foundation depths are not shown.
- Section 2.2 of the revised EIAR states the proposed turbines will be Enercon E126 but the letter from Noise and Vibration Consultants Ltd. states those or Vestas V-126 are the candidate turbines. Performance specifications for the Vestas turbines are provided in the submission but no detailed information is provided for the Enercon turbines.
- Section 2.5.2 (Wind Turbine Generator) of the revised EIAR is not definitive in relation to e.g. turbine construction materials, whether they would be direct drive system or gearbox turbines, and locations of transformers and associated switchgear. There are many other non-specific descriptions in the submission. The information provided does not fulfil the Board's request as adequate, accurate, specific turbine details have not been provided.
- The existing turbines plus the larger eight permitted/proposed turbines have not been fully cumulatively assessed in terms of impact on hen harriers. The permitted/proposed turbines are potentially a much larger hazard/maze to birds and bats. The ground to rotor blade distance is also noted.
- There appears to be contradictory statements about collision on page 5-126.
- Non-compliance with the requirements of the SEA Directive.
- Concern about impact on landscape, ecology, visual and residential amenity, archaeology, natural heritage, and traffic safety.

6.4.5. Leitrim County Council

A further response was also received from the planning authority. The council's submission can be summarised as follows:

- The council wish to reiterate its three principal concerns on which permission was refused.
- Additional walkovers, findings, and updated documentation e.g. EIAR and the response to the department's concerns, further to the decision, is welcomed. It is acknowledged the applicant has attempted to address the reasons for refusal.
- The planning authority welcomes the updated EIAR chapter 5 and makes specific reference to the sensitivity ratings for protected birds, the significance of the habitats to be lost, and the Peatland Habitat Management Plan (PHMP).
- The planning authority had been satisfied with the development description as originally applied for. The planning authority is 'of the opinion that in the event of planning permission being granted, the intervening years between permission and development will likely present updated and improved models of turbine which the developer could utilise. In this regard, it is respectfully considered that the Board could introduce a condition to a grant of planning permission to facilitate such future developments'.

7.0 **Assessment**

7.1. This assessment has three elements: a planning assessment, an environmental impact assessment (EIA), and an appropriate assessment (AA). In each assessment, where necessary, I refer to issues raised by the different parties in the various submissions to the Board. There is an inevitable overlap between some assessments, for example some matters raised fall within both the EIA and the AA processes.

8.0 Planning Assessment

Having examined the application details and all other documentation on file, including all of the submissions received in relation to the appeal, and inspected the site, and having regard to relevant local/regional/national policies and guidance, I consider that the main issues in this appeal, other than those set out in detail within the EIA and AA, are as follows:

- Planning Authority Reason for Refusal No. 1 – Landslide
- Planning Authority Reason for Refusal No. 2 – Boleybrack Mountain SAC/AA
- Planning Authority Reason for Refusal No. 3 – In-Combination
- Turbine Type

8.1. Planning Authority Reason for Refusal No. 1 – Landslide

- 8.1.1. The first reason for refusal states that the planning authority is not satisfied that the proposed development could not result in a peat landslide occurring, considers that the Peat Landslide Hazard and Risk Assessment (PLHRA) fails to clearly demonstrate that the peat conditions at the subject site are different and more stable than the site of the Shass Mountain failure, and considers that the environmental impacts arising from a peat landslide have not been adequately considered.
- 8.1.2. This first reason for refusal is closely linked with chapter 6 (Soils and Geology) of the EIAR which is summarised and assessed in sections 9.71-9.104 of section 9 (Environmental Impact Assessment) of this inspector's report. Given the overlap in content, section 8.1 and those sections should be read in conjunction.
- 8.1.3. The reason for refusal states that the planning authority is not satisfied that the development 'could not' result in a peat landslide occurring. I consider that it is practically impossible to be absolutely certain that a development such as a wind farm on the slope of a mountain 'could not', in theory, result in a landslide given the number of factors affecting it. The Shass Mountain failure, for example, which is referenced throughout the application documentation, was unrelated to any wind farm development. However, it is appropriate to ensure that the risk of a peat landslide occurring is as remote and as mitigated as possible, and that potential effects are as

limited as possible. There is an existing 15 no. turbine wind farm in the area and the proposed four turbines are to be an extension of that wind farm. Four other turbines are also permitted, but not yet built. Given the robust policy framework supporting development of the type proposed, the presence of existing turbines, and additional permitted turbines, I consider the proposed turbine development is acceptable, in principle, should the risk hazard be sufficiently low.

- 8.1.4. As set out in more detail in the soils and geology chapter in section 9 of this inspector's report, the risk hazard has been considered in detail. I consider that it has been adequately demonstrated by the applicant, in the grounds of appeal, that the peat conditions at the subject site are different and more stable than at the site of the Shass Mountain failure. It is outlined how the Shass failure site was more likely to fail than the proposed turbine locations are.
- 8.1.5. The third main issue in the first reason for refusal considers that the extent of environmental impact occurring from a failure has not been adequately considered. This has been briefly addressed in the Minerex Environmental report received as Appendix F with the grounds of appeal. I consider it is satisfactory. It states that in the unlikely event of a failure the most significant environmental receptors are downgradient surface water features of moderate significance, any potential stability issues will likely be localised, and relevant mitigation measures are contained in chapters 7 and 8 of the EIAR. The issue of peat landslide was not a significant consideration in any of the previous planning applications relevant to the existing and permitted turbines in the general Boleybrack Mountain area.
- 8.1.6. Having regard to the foregoing, and as expanded upon in more detail within the EIA section of this inspector's report, I consider that the issues raised in the first reason for refusal have been adequately addressed.

8.2. Planning Authority Reason for Refusal No. 2 – Boleybrack Mountain SAC

- 8.2.1. The second reason for refusal considers the application did not demonstrate that the proposed development, individually or in combination with other plans and projects, would not be likely to have a significant effect on the ability of Boleybrack Mountain SAC to achieve its conservation objectives. The reason for refusal only relates to Boleybrack Mountain SAC and is therefore an AA issue. Section 8.2 should be read

in conjunction with the AA section of this inspector's report where this issue is expanded upon in detail. I note that the decision did not include Lough Gill SAC in this reason for refusal, or any of the other reasons, despite there being hydrological links to that European site.

8.2.2. The appropriate assessment that I have carried out concludes 'Following AA, it has been ascertained that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of Boleybrack Mountain SAC or Lough Gill SAC, or any other European site, in view of the site's conservation objectives. This conclusion is based on a complete assessment of all aspects of the proposed project and there is no reasonable doubt as to the absence of adverse effects'.

8.2.3. Having regard to the foregoing, I consider that this reason for refusal does not apply.

8.3. Planning Authority Reason for Refusal No. 3 – In-Combination

8.3.1. The third reason for refusal states the planning authority is not satisfied that the proposed development, in combination with other plans and projects, would not be likely to have a significant adverse effect on the environment, and consideration of the cumulative impacts in the EIAR is incomplete. Page 36 of the grounds of appeal notes that the second reason for refusal considered that assessment of cumulative impacts was incomplete, and therefore the inclusion of the third reason for refusal is not appropriate. While I understand the applicant's argument, I consider that the second reason for refusal is based on Boleybrack Mountain SAC/AA, despite reference to the EIAR, whereas the third reason for refusal is broader and applies to wider environmental considerations.

8.3.2. Table 2.2 of the applicant's EIAR identifies other wind farms in the wider vicinity of the site. Section 2.10 (Cumulative Impact Assessment) states, inter alia, 'each relevant chapter within this EIAR includes a cumulative impact assessment where appropriate. The potential for cumulative impacts arising from other projects has therefore been fully considered within this EIAR ... Assessment material for the Cumulative Impact Assessments carried out within this EIAR was compiled in relation to the relevant infrastructure developments within the vicinity of the proposed development from which there may be potential for cumulative impacts to arise'. Page 36 of the grounds

of appeal document states ‘Within each chapter of the EIAR, a cumulative impact assessment was provided, which was carried out based on the information provided in Chapter 2’.

- 8.3.3. The EIAR is summarised in section 9 of this inspector’s report and where relevant the in-combination issue is referenced e.g. biodiversity, hydrology and hydrogeology, noise, shadow flicker, and landscape and visual. I do not consider that there is any significant or notable in-combination concern evident from the EIAR. The EIAR adequately addresses cumulative issues where relevant.
- 8.3.4. The planning authority appears to be particularly concerned about the possibility of the four proposed turbines being constructed, in combination or in close sequence, with the four permitted turbines (19/26). In the ‘Reasons and Considerations’ section of the planning authority’s second planning report for 19/26, under the EIA heading, it is stated that the EIAR adequately identified and described cumulative effects of the proposed development on the environment, and concluded that, subject to compliance with conditions, the effects of the proposed development on the environment in combination with other plans and projects in the vicinity would be acceptable. As I am satisfied that the applicant has adequately demonstrated that there would be no significant in-combination issue with the proposed development, and as the planning authority considered there was no in-combination issue with the permitted development, then I do not foresee any significant in-combination issue from an environmental perspective. Construction of this number of wind turbines at the same time, or closely following, would not be unusual.
- 8.3.5. I consider that this reason for refusal is not applicable.

8.4. Turbine Type

- 8.4.1. Throughout the planning application and associated documentation the specific turbine dimensions were not identified. Having regard to *Sweetman v An Bord Pleanála* ([2021] IEHC 390) (the Derryadd decision) further information was sought by the Board to address the relatively open-ended turbine dimensions cited in the public notices and the application documentation, in order to be consistent with the Planning & Development Regulations, 2001 (as amended) requirement for plans and particulars as are necessary to describe the works proposed.

- 8.4.2. In the further information response, section 2.5.1 of the revised EIAR chapter 2 cites the proposed turbines as having a rotor diameter of 126 metres and a blade tip height of 155 metres i.e. the indefinite 'up to' dimensions have been removed. Revised drawing no. P-400-2 submitted as part of the applicant's further information response in appendix C removes all indefinite terminology relating to turbine dimensions and shows a turbine which is 155 metres to blade tip height with a 126 metres rotor diameter and a 92 metres high hub height. The proposed tower is tubular steel with a grey colour.
- 8.4.3. The applicant states in the further information response cover letter that there are two candidate turbine types. 'The Appellant confirms that either the Vestas V-126 or Enercon E-126 are the candidate turbines. Both turbines have similar properties and are in accordance with the turbine parameters outlined under the revised description of development'.
- 8.4.4. I note the submission from Leitrim Wind Industry Awareness on the applicant's further information response which outlines inconsistencies in the applicant's response to the issue of dimensions. Notwithstanding, I am satisfied that the further information response adequately addresses the issue of appropriate plans and particulars and the concern about open-ended dimensions. A condition can be attached, should permission be granted, specifically identifying the turbine dimensions permitted.
- 8.4.5. The planning authority submission on the further information response requests a condition be attached to a grant of permission to facilitate the provision of alternative turbines which may come on the market in the time period between any grant of permission and the construction phase. This further information request issued on foot of the Derryadd decision in order to address the open-ended nature of the planning application so that there was certainty for all parties as to what would be permitted under any grant of permission, and to satisfy the Planning & Development Regulations, 2001 (as amended), in relation to plans and particulars. In my opinion the further information response has adequately identified the turbine dimensions proposed. The specific manufacturer was/is not the issue, rather it was the uncertainty of dimensions proposed.
- 8.4.6. Having regard to the foregoing, I consider that the further information response addresses the previous uncertainty in relation to turbine dimensions and has

adequately addressed the issues that came out of the Derryadd decision. Should permission be granted for this application there is certainty to all parties as to the extent of the turbine types permitted i.e. a turbine with a blade tip height of 155 metres, a rotor diameter of 126 metres, and a hub height of 92 metres as per drawing no. P-400-2 received by the Board as part of the further information response.

9.0 Environmental Impact Assessment (EIA)

Introduction

- 9.1. This section of the inspector's report comprises an EIA of the proposed development. Some of these matters have already been referred to in the planning assessment above. This section of the report should be read, where appropriate, in conjunction with the relevant sections of the Planning Assessment and the Appropriate Assessment (section 10) below.
- 9.2. The application was accompanied by an Environmental Impact Assessment Report (EIAR) prepared by Jennings O'Donovan & Partners Ltd. (Jennings O'Donovan), dated December 2020. The EIAR comprised 'Volume I: Main Report' and 'Volume II: Appendices'. A revised/amended EIAR was submitted as part of the further information response to Leitrim Co. Co. and some revised and updated EIAR chapters (i.e. 5 and 6) were also submitted with the grounds of appeal. In addition, revised chapters 2 and 5 were submitted on foot of the Board's further information request. I indicate which specific submission I am referring to when addressing each chapter.
- 9.3. The proposal falls within Schedule 5 Part 2 Paragraph 3 (Energy Industry) (i) of the Planning & Development Regulations, 2001 (as amended) i.e. 'Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts', and therefore an EIAR is mandatory.
- 9.4. The application falls under the requirement of Directive 2014/52/EU. As required under article 3(1) the EIAR identifies, describes, and assesses the direct and indirect significant effects of the project on the following factors: (a) population and human health, (b) biodiversity, with particular attention to species and habitats protected

under Directive 92/43/EEC and Directive 2009/147/EC, (c) land, soil, water, air and climate, (d) material assets, cultural heritage and the landscape, and (e) the interaction between the foregoing. Article 3(2) requires that the effects referred to in paragraph 1 on the factors set out shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned. Though no specific major accidents or disasters chapter is provided the main concerns in this regard i.e. fire, landslide, and flooding, are addressed in the relevant chapter.

- 9.5. I have carried out an examination of the information presented by the applicant and the submissions made. I am satisfied that the EIAR, including the various amendments and updates made to it including chapters 2 and 5 submitted as part of the further information response to the Board, has been prepared by competent experts to ensure its completeness and quality, and that the information contained in the EIAR is up to date, adequately identifies and describes the direct, indirect, and cumulative effects of the proposed development on the environment, and complies with article 94 of the Planning & Development Regulations 2001, (as amended).
- 9.6. The four environmental factor groups (a) to (d) set out in section 9.3, above, are addressed within this EIA. Both population and human health (a) and biodiversity (b) have their own individual chapter in the EIAR; chapters 4 and 5 respectively. The factors outlined in (c) are addressed individually/in combination in chapters 6, 7, and 8, and the factors outlined in (d) are addressed in chapters 9 to 13. The interactions of the foregoing are considered in chapter 14.
- 9.7. Chapters 1 to 3 of the EIAR are summarised in sections 9.8-9.13 of this inspector's report. The subsequent sections address each of the environmental factors. The headings are those used in the EIAR except where cited e.g. chapter 12. The content of each EIAR chapter is summarised with relevant headings as per the chapter. The 'Assessment & Conclusion' section at the end of each chapter summary is my assessment and conclusion of that particular factor i.e. population and human health, biodiversity etc. This section of the report should be read, where necessary, in conjunction with the relevant Planning Assessment and Appropriate Assessment sections.

- 9.8. Chapter 1 (Introduction) of the EIAR provides, inter alia, an overview of the proposed development, EIA legislation and guidance, the impact classification terminology, the authors of the various chapters, and pre-application consultations. It is stated that all residents within 1.5km of a proposed turbine were directly informed of the planning application.
- 9.9. Chapter 2 (Project Description) provides a site description, detail of the existing, permitted, and proposed turbines (table 2.1) (e.g. heights, rotor diameter, elevations; the proposed turbines will have a similar 92 metres hub height to the four permitted turbines, but a longer rotor diameter. There is an example of inconsistency in the applicant's documentation here where the blade diameter for the proposed turbines is cited as 127 metres. The blade diameters for the permitted turbines are 115 metres), detail of other wind farms in the area, and a planning history (the 15 no. existing turbines were fully constructed and commissioned in January 2018 with a theoretical capacity of 34.5MW). Table 2.2 details other wind farms in the vicinity of the proposed site and these are shown on figure 2.2.
- 9.10. Section 2.3 refers to site selection and the alternatives considered. Considerations for alternatives included commercial, construction, operational, and key environmental constraints. It is stated that a wind farm 'must create a balance between achieving an acceptable level of environmental effects whilst maximising energy yield'. The site is considered appropriate for reasons including proximity to the existing wind farm, good average wind speed and generation capacity, and utilisation of existing trackways. In a 'do-nothing' scenario the opportunity to capture renewable energy resources would be lost, resulting in higher levels of pollutants and greenhouse gas (GHG) emissions. Nine criteria considered for alternative sites are set out in section 2.4.4 e.g. availability of wind, protected areas, housing density, grid connection, accessibility, terrain, and aviation interference. The applicant considered that viable alternative sites were not considered feasible. Reasons given include that visual intrusion is minimised given proximity to the existing and permitted turbines, utilisation of existing and permitted electrical and site infrastructure, mean wind speed, where the SAC is crossed it is crossed 'for the most part, over existing trackways', and distance from the nearest house.
- 9.11. Alternative designs, including three and five turbine developments, were considered, as were alternative turbine types and heights. The four turbine layout is considered

the optimal design. In terms of an alternative feasible grid connection the applicant considered a connection to the Srahnanagh 110kV substation though Corderry substation was selected as the route is significantly shorter (9.5km as opposed to 21.3km). The reason for choosing wind energy as a process as opposed to hydro, solar, or biomass, is outlined in section 2.4.8. Detail of the site infrastructure and construction is set out in sections 2.5 and 2.6. Among other issues, a CEMP would be prepared and construction activities would be monitored by a geotechnical engineer, an archaeologist, and an ecological clerk of works (ECoW).

- 9.12. Section 2.10 states that each relevant chapter in the EIAR includes a cumulative impact assessment. The potential cumulative impact of the proposed development combined with the potential impact of other projects has the purpose of identifying the collective influence on the surrounding environment. Projects included in the cumulative assessment include the adjacent existing and permitted Tullynamoyle wind farm developments and developments ‘within the vicinity of the proposed development from which there may be potential for cumulative impacts to arise’.
- 9.13. Chapter 3 (Planning Policy) outlines wider international, European, and national policy and legislation related to renewable energy. The Northern & Western RSES and 2015-2021 County Development Plan (as varied and extended) are also referenced. Chapter 3 concludes that ‘there is a considerable amount of policy and guidance ... supporting commercial on-shore wind energy development in Ireland’.
- 9.14. I have carried out an examination of the information presented by the applicant, including the EIAR and supplementary information, and the observations/submissions made during the course of the application and the appeal. A summary of the submissions/observations made by the planning authority, prescribed bodies, other third parties, and the applicant/appellant, have been set out in sections 3 and 6 of this inspector’s report. The main issues raised by third parties specific to EIA can be summarised as follows (issues specific to AA are addressed separately in section 10 of this Inspector’s Report):
- Impact on biodiversity.
 - Visual and landscape impact.
 - Impact on hydrology and water.

9.15. These issues are addressed below under the relevant headings, and as appropriate in the reasoned conclusion and recommendation. I am satisfied that the EIAR and supplementary information has been prepared by competent experts to ensure its completeness and quality, and that the information contained in the EIAR, and supplementary information provided by the developer, adequately identifies and describes the direct, indirect, and cumulative effects on the environment and complies with article 94 of the Planning & Development Regulations, 2001 (as amended).

Chapter 4 – Population and Human Health

9.16. This section describes the potential impacts and effects of the proposed development on human beings, population, and human health. Chapter 4 of the EIAR as submitted with the FI response to the planning authority has been used for this section.

9.17. Assessment Methodology and Significance Criteria – A desk study was undertaken to assess the potential impacts. Table 4.1 outlines the impact assessment criteria and table 2 outlines the rating of environmental impacts.

9.18. Baseline Description – The closest habitable house to a turbine (H13; south of T22) is approx. 919 metres (this slightly contradicts chapter 2 which gives a distance of 926 metres; notwithstanding they are significant distances). The county population trend is noted and the net outward migration from the county is referenced (I note the 2022 census preliminary results show Leitrim has a population of 35,087, a 9.5% increase from 2016). The study area is Killarga District Electoral Division (DED). Table 4.3 shows the population of this DED dropped from 88 in 2011 to 67 in 2016 (and is 65 in 2022 according to the census). Other issues are set out such as household statistics, employment and economic activity, tourism, land use, and accidents and disasters.

9.19. In terms of accidents and disasters potential sources of pollution on site would be limited, according to the applicant. 'The potential natural disasters that may occur are ... limited to peat-slide, flooding and fire'. Peat slide and flooding are addressed in other relevant chapters while 'the risk of significant fire occurring, affecting the wind farm and causing the wind farm to have significant environmental effects is limited'. There is no potential effect of a major industrial accident involving dangerous substances. Weather-related issues are also noted e.g. extreme winds, lightning, and ice throw.

- 9.20. Common concerns around wind farms in terms of health are generally electromagnetic fields (EMF), shadow flicker, noise, air quality, and water contamination. Each of these is addressed in other chapters apart from EMF. A 2014 Canadian study is referenced to dispel any concern in this regard. Section 4.3.7.6 states that there is no peer reviewed scientific research to support negative health effects on people who live near wind farms. The turbines themselves pose no threat to the health and safety of the general public.
- 9.21. Assessment of Potential Impacts – In a ‘do nothing’ scenario the existing site uses would continue, which would happen even if the development proceeds, and the opportunity to capture a renewable energy resource would be lost.
- 9.22. The proposed development is not considered to have any impact on population levels. There would be a slight negative short-term impact on the residential amenity of the local population during construction and decommissioning. Up to 50 no. people would be employed at peak construction. Rates would be paid to the local authority and the likely total cost of the project would be approx. €24m. The EIAR does not expect the proposed development to have an adverse impact on tourism infrastructure and the existing wind farm is already a feature on the surrounding landscape. The EIAR considers there would be a ‘slight positive impact during operation’ in terms of tourism. Potential impacts in terms of land-use, accidents/disasters, and weather/climate change are addressed. A number of effects on human health are considered though many of these issues such as shadow flicker, noise etc. are addressed in more detail elsewhere in the EIAR. The ‘potential for negative health effects associated with the Proposed Development is negligible’ during the construction phase. During operation the wind farm would have a slight, long term impact on air quality ‘which will contribute to positive effects on human health’.
- 9.23. Mitigation Measures and Residual Effects – Though no significant negative impact was established, a number of safety measures could be implemented for workers and the public during the construction, operation, and decommissioning stages e.g. reliable manufacturing, signage, regular inspection and maintenance, standard health and safety procedures, local notification of abnormal loads or large volumes of HGV traffic, and monitoring by a supervisory control and data acquisition (SCADA) system. The residual risk of accidents and disasters, and effects of weather, are considered to be imperceptible.

- 9.24. Human health issues are identified with mitigation measures proposed in relation to shadow flicker, noise (construction practices and operational turbines), traffic (it is 'envisaged' that subject to quality and quantity rock would be sourced from local quarries reducing deliveries on the wider road network), air quality (construction practices), and water contamination measures proposed are outlined in chapter 7.
- 9.25. Cumulative Effects – Apart from the existing/permitted Tullynamoyle wind farm the nearest wind farm is Garvagh Glebe approx. 8km to the south west and there are seven others to the south/south west within 10km. The Landscape & Visual Impact Assessment (LVIA) in chapter 11 'confirms that there will be no cumulative impact on the landscape from other wind farms in combination ...'
- 9.26. Summary of Significant Effects – No likely significant effects on population and human health have been identified.
- 9.27. Statement of Significance – The proposed development has been assessed as having the potential to result in a slight positive long-term impact overall. No likely significant cumulative effects are predicted.
- 9.28. Assessment and Conclusion – I have considered the submissions on file, this chapter of the EIAR, and all supplementary information. Wind farms are a common sight in Ireland and are encouraged in principle in planning policy as a mechanism to generate renewable energy and reduce the carbon footprint. Some of the impacts raised in the grounds of appeal are interlinked with other factors and these are assessed in more detail elsewhere in this inspector's report. The proposed turbines are in a relatively remote location and I do not consider that there would be any undue impact on tourism given the number of turbines would increase from 19 no. to 23 no. I do not believe that the propose development would unduly affect issues raised in the Fáilte Ireland submission. I am satisfied that the potential for impacts on population and human health can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative impacts on population and human health.

Chapter 5 – Biodiversity

- 9.29. This chapter assesses the potential impacts of the proposed development on the biodiversity of the site and surrounding area. Chapter 5 as received on foot of the Board's further information request has been used for this section. It was prepared by Doherty Environmental Consultants Ltd. Some elements of the Board's further information request in relation to the biodiversity chapter have not been fully addressed or the information submitted is not complete. For example, Ballintemple and Ballygilgan SPA is shown on figure 5.14b but is not included in table 5.10, sequential table numbers are 5.21, 5.32, 5.43, 5.24, 5.25 ..., the collision risk impact significance for golden plover would be low and not very low as stated, and the document is still referenced as an EIS on page 5-136. Notwithstanding these, and some other examples, I consider that the chapter received can be considered to have addressed the Board's concerns, and any errors are not material to the proposed development.
- 9.30. Methodology – A desktop assessment was carried out as were habitat and mammal surveys on 7th June and 7th October 2020. Previous habitat surveys had also previously been carried out. Otter surveys were also carried out including on 21st February 2022. Detail of bird surveys carried out are outlined, including for the 2021 breeding season. In total it is stated 596.25 hours of vantage point surveying was carried out between non-breeding (October 2017 – March 2020; 173 hours) and breeding (2018 – 2021; 423.25 hours) seasons. Breeding bird transect surveys were carried out. It is stated 'significant survey effort to identify the bird populations occurring at and surrounding the proposed site has been undertaken since 2003' (page 5-10).
- 9.31. Bat activity surveys were undertaken during the 2020 bat activity season, as well as previous years, as were marsh fritillary surveys. Aquatic surveys were completed at three upland streams draining the proposed development: the Tullinwillin Stream, the Skeanada River, and Drumderg Stream.
- 9.32. Site evaluation for habitats and fauna, birds, and bats is set out, as is impact assessment methodology.
- 9.33. Receiving Environment – Habitat maps of the turbine locations are set out in figures 5.8-5.10. The proximity of Boleybrack Mountain SAC is noted, and it is described,

including the proposed road section within the SAC between proposed T17 and the existing wind farm. Approximately 303 metres of existing track would be upgraded, and 75 metres newly constructed crossing an area of acidic grassland. 'The habitats occurring within and immediately adjacent to the section of the proposed access road within the SAC are not representative of any qualifying habitat for which the SAC is designated' (page 5-27). 'No nationally rare or protected flora was noted during the habitat surveys within the proposed site' (page 5-30).

- 9.34. Table 5.12 outlines the habitats occurring under the footprint of the proposed development i.e. the turbines, access roads, substation, and grid connection route. Dominant habitats are wet/marshy grassland, modified blanket bog, and artificial surfaces. Terrestrial habitats on site are generally described in section 5.3.4.2. Figure 5.41 shows the relationship between the distribution of Annex I peatland habitat as mapped for article 17 reporting and the results of the habitat survey for the proposed development. Aquatic habitats are also described, including Belhavel Lough and Lough Gill.
- 9.35. No evidence indicating the presence of otters was identified on surveys of the Tullinwillin, Skeanada, or Drumderg watercourses close to the proposed turbine locations. Though the lower watercourse sections/road crossings along the grid connection route recorded no field signs, they provide suitable foraging habitat and otters are likely to be present. No badger setts occur in the vicinity of the proposed turbines and moorland habitats are generally considered to be unsuitable for badger setts. While Irish hare is likely to occur no evidence of it was noted. Other mammals that could occur include pine marten, red squirrel, fox, rabbit, hedgehog, wood mouse, brown rat, and pygmy shrew.
- 9.36. Figure 5.17 shows a low bat habitat value within 200 metres of T16, T17, and T23, with a low-moderate value within 200 metres of T22. There are no buildings or trees with the potential to function as a bat roost within 200 metres of a proposed turbine, and the masonry bridge to the south of T23 is not suitable. Previous manual and automatic bat surveys in the vicinity, for earlier wind farm stages, are set out. These found low levels of bat activity in the vicinity for these earlier stages. 2020 manual and automatic surveys were carried out, resulting in low bat activity at each proposed turbine location.

- 9.37. Bird surveys are also set out. A summary of all bird species recorded at and surrounding the proposed site at different times between 2002 and 2015 is shown in table 5.19 with some commentary provided. Table 5.20 provides extensive detail of flight paths of sensitive and secondary species recorded during vantage point surveys between 19th December 2017 and 16th August 2021. 183 no. observations were made. The main species referenced are buzzard, kestrel, and hen harrier, though others are also noted. Flight paths are illustrated on figures 5.18 – 5.32. Commentary is also provided. Target and secondary target species were rarely recorded during non-breeding season surveys.
- 9.38. Breeding bird transect surveys were carried out in 2018, 2019, and 2020 with the results shown on pages 5-82 and 5-83. No evidence indicating the presence of sensitive breeding bird species was observed e.g. golden plover, red grouse, merlin, or hen harrier. A summary of survey findings of sensitive species is provided in section 5.3.5.3.4 i.e. hen harrier (no evidence of confirmed breeding status was observed in 2020 and during the 2021 breeding season no behaviours, evidence, or activities indicative of confirmed or possible breeding status were observed), merlin (not considered to occur within the vicinity of the proposed or existing wind farm), golden plover (breeding habitat for the species is more closely associated with blanket bog habitat at high elevations to the north and north east of the proposed site), whooper swan (only two observations between 2017 and 2021), and red grouse (the Red Grouse Management Plan for Boleybrack Mountain management area is over 5km to the north east and has resulted in a significant increase in population, but no evidence of their presence in the vicinity of the proposed extension site was observed between 2017-2020). Meadow pipit commonly occurs.
- 9.39. Frogs were frequently found in modified blanket bog habitat during surveys. Fish and white-clawed crayfish are referenced. White-clawed crayfish were not identified during 100 metres transects along stretches identified in figure 5.7. High flow rates are likely to limit their occurrence immediately downstream though they are likely to occur further downstream. Marsh fritillary is set out in section 5.3.7.
- 9.40. A site evaluation is set out in section 5.3.8. Though a section of access road is proposed within the SAC no qualifying habitat occurs under or within close proximity of it. The road footprint is wet/marshy grassland of local value and low conservation importance. Lough Gill SAC is downstream of the project site and grid connection

route. No rare or protected flora species were recorded. The wet grassland and acidic grassland habitats are generally species-poor and widespread, not of conservation importance, and of low ecological importance. The poor fen/flush area around T17 is of high local value and county conservation importance. Modified blanket bog occurs around T16 and T23. Though degraded, blanket bog is an Annex I habitat. Areas of cutover blanket bog with uncut sections around T16 and T23 are representative of active blanket bog and are of county conservation importance. The Skeanada (north of T23) flows into the Bonet River. The Tullinwillin and Knockacullion Streams flow into Belhavel Lough and out via the Cashel Stream which is the main outflow from the lake and a tributary of the Bonet River. The grid connection route traverses five watercourses, all of which drain to Belhavel Lough or the Cashel Stream. The Bonet River is part of Lough Gill SAC.

- 9.41. Otter is associated with Belhavel Lough, the Skeanada Stream downstream, and Lough Gill SAC. The proposed extension provides limited habitat for other non-volant mammals, Irish hare being the most likely. The project 'has been identified as having a low site risk score ... for bats'. Table 5.24 identifies 15 no. key bird species and outlines key sensitive receptors. It was considered that further assessment of the potential of the proposed wind farm to negatively affect hen harrier, kestrel, buzzard, golden plover, whooper swan, red grouse, snipe, meadow pipit, and skylark would be undertaken.
- 9.42. The site offers suitable habitat for frogs, smooth newt, and common lizard. Belhavel Lough and Skeanada Stream downstream support coarse fish. Small populations of Atlantic salmon, brown trout, and lamprey species are supported by the Skeanada downstream. Belhavel Lough also supports white-clawed crayfish, lamprey, and otters.
- 9.43. Do Nothing Impact – The footprint will continue to support low levels of turbary and agricultural activity.
- 9.44. Potential Impacts of the Development – Potential impacts will arise during the construction phase. There will be direct habitat loss under the footprint of turbine bases and crane hard standings (7,390sqm), access track and cable trenches (13,250sqm), the substation and temporary site compound (1,405sqm), and grid connection (3,000sqm). The significance of the direct habitat loss is outlined in table 5.25. The

significance to all is stated as resulting in a low magnitude effect of permanent, minor significance. Table 5.26 outlines the significance of indirect impacts to habitats arising from the different elements of the proposed development such as access roads and construction vehicle movement, excavations, cable trenches, and grid connection. The potential significance, without mitigation, range from 'no negative impact are anticipated' for grid connection works to short to long-term, moderate to severe negative impacts from potential contamination of water bodies associated with excavation of hardstandings and foundations.

- 9.45. Article 17 mapping has not mapped any areas of dry heath, wet heath, or *Molinia caerulea* habitat (Boleybrack Mountain SAC QIs) within the wind farm extension site. Field surveys have not identified them. Article 17 mapping has mapped the presence of blanket bog within the boundary (proposed new access track) as per figure 5.41. '(T)he area of blanket bog habitat mapped within the ... site is not considered to be representative of blanket bog habitat but is, based upon the results habitat surveys on site, representative of wet/marshy grassland and acid grassland habitat. Given that the Article 17 mapped areas of blanket bog occurring within the site are representative of non-peat forming grassland habitat, there will be no potential for the proposed wind farm extension to result in the loss of blanket bog that forms part of its national distribution as mapped for Article 17 reporting ... T16 is located within an area of modified but active blanket bog. This habitat is representative of an Annex I habitat. The area of modified blanket bog occurring at and under the footprint of T16 does not form part of the national distribution of this habitat as reported for the Article 17 reporting' (page 5-109).
- 9.46. Peatland habitats are sensitive to changes in the hydrological regime. Various studies are referenced under the heading 'Indirect Impacts to Peatland Habitats' (pages 5-109 – 5-116) in the context of existing habitat in the vicinity of the three proposed northern turbines. In areas of blanket bog where hydrological disturbance/drainage has occurred, the impact of additional drainage will be reduced. Past drainage has already undermined the hydrological regime at T16 and T23. The nearest area of blanket bog habitat to the proposed access track through the SAC is approx. 200 metres away and 'there will be no potential for the installation of this track to result in alterations to the hydrological regime of peatland habitats in the wider surrounding area'. The modified blanket bog south west of T17 and within the SAC and Article 17 mapping is separated

from the T17 area by the existing access road which forms an effective break, similar to the east of T16.

- 9.47. Existing baseline conditions around T16 are 'likely to limit the potential for indirect impacts to blanket bog habitat as a result of changes to the hydrological regime and water drawdown'. The detailed design of the drainage system 'will aim to achieve a net increase in surface water levels in peatland habitats within and surrounding the proposed wind farm extension'. Given the existing drained condition of the degraded blanket bog around T23 the infrastructure 'will not have the potential to result in significant indirect impacts to surrounding blanket bog habitats ...' T23 is separated from the SAC boundary by an area of wet/marshy grassland and the Skeanada Stream. There 'will be no potential for the provision of infrastructure associated with ... T23 to result in changes to hydrological regime of the blanket bog habitats of the SAC to the north. No works will be required to the modified blanket bog either side of the existing T23 access track.
- 9.48. There is a low possibility that otters may interact with the proposed site. There is a slight, unlikely risk of injury during construction such as getting trapped in excavations, which could also affect badger. Impact to water quality could have downstream impacts. Grid connection watercourse crossings are not predicted to have any impact as these will avoid instream or bankside works. Badgers could be exposed to polluting substances during construction, but there will be no impact during grid connection. '(T)he potential for the construction phase to negatively affect bat species as a result of the loss of ... habitats or disturbance during the construction phase is considered to be extremely unlikely'.
- 9.49. The construction phase impacts to birds (hen harrier, kestrel, buzzard, golden plover, whooper swan, red grouse, meadow pipit, and skylark) are outlined i.e. habitat loss and disturbance/displacement. There would generally be an overall negligible magnitude impact in habitat and foraging area lost given the limited land take and the extent of similar habitats in the wider area. It is stated that 'there will be no potential for the construction phase of the project to result in displacement to hen harrier nest sites'. It is possible that the construction phase could result in disturbance to breeding golden plover, though there are no records for breeding golden plover within 500 metres of proposed turbine locations. Meadow pipit and skylark are vulnerable to displacement during the construction phase. There will be a minor loss of amphibian

habitat, though suitable alternative breeding habitat occurs throughout the surrounding area. The potential for adverse effects on fish and aquatic fauna could arise from the release of pollutants such as suspended solids and contaminating substances, and release of nutrients.

- 9.50. The EIAR considers the operational phase will not cause additional significant impacts to the quality or functionality of habitats within the development area. The net increase of surface water runoff increase relative to the scale of the site or scale of the associated catchment is considered to be an imperceptible adverse impact. The use of different construction materials can lead to changes in the hydrochemistry of the substrate into which the materials are placed. Otters are extremely unlikely to be disturbed during operation and no effects to badgers are predicted. The risk to the three high risk species of collision by wind turbines (leisler's bat, common pipistrelle, and soprano pipistrelle) is of low risk.
- 9.51. Operating wind farms have the potential to affect birds through collision risk, reduction in habitat extent, and declines in foraging efficiency and/or prey species. Collision risk to the eight species cited in paragraph 9.49 of this inspector's report is outlined. 'The risk of hen harrier collision with wind turbines is considered to be lower than that for most other raptors'. The population of breeding hen harrier in the 10km² squares in which the wind farm is located has increased in recent years indicating the existing wind farm is not undermining any increase. The potential for collision with hen harriers will represent a low impact significance (low magnitude effect to a species of high sensitivity). Kestrels are at a high risk of colliding with operating turbines. There is an absence of evidence of breeding in the vicinity of the site and a low level of flight activity recorded. The potential for collision with kestrel will represent a low impact significance (medium magnitude effect to a species of medium sensitivity). The collision risk to buzzard is considered to be of very low impact significance, as is golden plover (Inspector's Note – as per paragraph 9.29 of this inspector's report the correct impact significance for golden plover is low). Collision risk to whooper swan and red grouse is of very low significance. The risk of collision to meadow pipit and skylark 'is assessed as being of negligible magnitude and negligible significance'.
- 9.52. Displacement to the eight species is set out. In relation to hen harrier, various studies are referenced. Areas of potential avoidance using the lower (100 metres from turbines) and upper (250 metres) ends of the displacement buffer suggested in one

study are calculated. The lower end would result in ‘an effect of very low significance to the hen harrier population occurring at the local scale ...’ The upper end would result in ‘an effect of low significance to the hen harrier population occurring at the local scale ...’ The displacement impact significance for kestrel, buzzard, golden plover, whooper swan, meadow pipit, and skylark is very low. The proposed development ‘will not have the potential to result in any habitat loss or displacement of red grouse’.

- 9.53. Declines in foraging and/or prey species is also considered. The diet of hen harrier, kestrel, and buzzard ‘consists largely of moorland bird species, particularly meadow pipit and skylark’ as well as voles, particularly for hen harrier. Based on studies, ‘the impact of decline in foraging efficiency and/or a reduction in prey availability is assessed as negligible’.
- 9.54. Impact to amphibians during operation could occur from contamination of waterbodies. Fish, crayfish, or aquatic fauna could also be affected.
- 9.55. Decommissioning impacts would be potentially similar to the construction phase. Similar mitigation measures will be implemented. A comprehensive reinstatement proposal will be submitted to the relevant competent authority.
- 9.56. Cumulative impacts to terrestrial habitats, birds, bats, non-volant mammals, and aquatic habitats and fauna are set out in section 5.5.4:
- Terrestrial habitats – The proposed development has been assessed as having a low impact to semi-natural habitats and affected habitats are not representative of national or international conservation value. The existing and consented wind farm was/is in an area of local importance. The proposed extension ‘will result in the loss of a small area of modified blanket bog habitat that is evaluated to be of county nature conservation value’. Therefore ‘there will be no potential for cumulative negative impacts to this habitat to arise’. Past land use practices have resulted in negative impacts to peatland habitats e.g. grazing, drainage, forestry, turbary, and access roads. Given the modified nature of peatland habitat the impact of T16 and T23 will be of minor significance. A PHMP will be implemented for the lifetime of the proposed development.
 - Birds – Apart from Tullynamoyle, 10 no. other operational wind farms are included as part of the cumulative assessment. Therefore there will be no

potential for cumulative construction phase impacts. There will be no potential for the proposed turbines to combine with other turbines to result in cumulative displacement impact to hen harrier nest sites. Combined with the existing/consented Tullynamoyle turbines, a 100 metres buffer from relevant turbines would result in a potential loss of 1.9% of habitat through avoidance within the 2km hen harrier foraging zone; an effect of low significance to the local population. A 250 metres buffer (shown on figure 5.40) will result in the potential loss of 13.4%; an effect of high significance to the local population. However, much of the habitat (64%/166 hectares) within the 250 metres buffer 'is not representative of preferred hen harrier breeding season habitat' and studies show foraging beyond a 2km core foraging zone. Any displacement will not undermine the availability of preferred foraging habitat.

As golden plover and red grouse activity was very low in the vicinity there will be no potential to result in negative cumulative effects. Given the distance to other wind farms in the wider area there will be no potential for it to combine to result in cumulative habitat loss. It is concluded the proposed turbines will not result in cumulative risk to hen harrier. Cumulative collision impacts to kestrel and buzzard is assessed as low. Given the absence of migratory routes and wetland bird species in the wider vicinity, there will be no cumulative potential to result in a barrier to the movement of birds.

- Bats – The combined effect of 23 no. turbines has the potential to result in impacts of low significance, based on the low levels of bat activity. The 23 no. turbines are in areas that are of sub-optimal value for foraging bats. There are no roosts in the vicinity of any of the turbines.
- Non-volant mammals – Should the construction phases of both the proposed and permitted turbines overlap potential will exist of cumulative impacts e.g. exposure to polluting substances or entrapment. Mitigation is proposed.
- Aquatic habitats and fauna – Should the construction phases of both the proposed and permitted turbines overlap there will be potential for combined impact to receiving watercourses and aquatic ecology. The potential impact, in the absence of mitigation, will range from moderate to major/severe.

- 9.57. Mitigation Measures – During the construction phase there can be mitigation by avoidance and mitigation by reduction. Habitat of high ecological value is avoided, and areas of deep peat is minimised. Existing turbary and agricultural tracks are used. ‘Avoidance’ mitigation measures are outlined e.g. machinery movement, activity during wet weather, and material storage. ‘Reduction’ mitigation measures include habitat disturbance confined to direct land take, minimal construction footprint, and installation of an impermeable barrier around construction areas for turbine bases to ensure no surface runoff.
- 9.58. A number of mitigation measures are proposed relating to water quality and aquatic fauna such as implementation of the SWMP, regular inspection of watercourses, 50 metres buffer zone from natural drainage features, drainage from construction areas to be collected in a closed system, and general construction practices. There is a significant overlap with mitigation proposed in Chapter 7.
- 9.59. Mitigation measures related to other issues include sealed storage of chemicals and grading of excavations for non-volant mammals, timed construction activity for birds, and appointment of an ECoW. Mitigation by remediation includes reinstatement of excavated peat, and implementation of a PHMP covering 90 hectares, the majority of which is representative of peatland habitat that has been modified by past land use practices. It is stated that all landowner consents are in place. Measures include blocking of artificial drains, grazing restricted to sheep at a maximum density, a restriction on all turbary activity, and monitoring.
- 9.60. During operation an Environmental Management Programme will be implemented and there will be ongoing monitoring of the drainage network. Structured vegetation will be removed to minimise bat interaction.
- 9.61. Residual Impacts of the Development – Residual impacts to designated conservation areas will be avoided provided mitigation measures are implemented. There will be a permanent loss of low ecological value habitat, and modified blanket bog. The PHMP is referenced as is the SWMP. The application of mitigation measures will ensure that significant residual effects to mammal and amphibian species ‘are extremely unlikely to occur’. Residual impact of collision risk for sensitive bird species will remain. The attractiveness of the turbine areas for bats will be minimised and the residual impact will be of low magnitude and minor significance.

- 9.62. Monitoring – An Environment Management Programme, PHMP, and SWMP will be implemented during the construction and operation phases. Post-construction bird and bat monitoring plans will be prepared and implemented.
- 9.63. Conclusion – The site is dominated by low quality habitat. Principal potential negative impacts relate to habitat loss, disturbance to QIs of the adjacent SAC, and downstream aquatic effects. A comprehensive approach to surface water drainage and slope stability has been developed. Measures will ‘minimise to an insignificant level’ the likelihood of an event occurring that could impact on SAC QIs and water quality.
- 9.64. Assessment and Conclusion – The above is a summary of the biodiversity chapter as received by the Board following the further information request. Issues of biodiversity were among the most common concerns cited in the observations received by both the planning authority and the Board.
- 9.65. Chapter 5 is detailed, addressing birds, bats, mammals, amphibians, and the aquatic environment, in terms of the proposed turbines and associated infrastructure, including grid connection, both by itself and in combination with other developments, in particular the adjacent existing and permitted 19 no. turbine Tullynamoyle wind farm. A detailed further information request was sought by the Board due, inter alia, to the fact that the biodiversity chapter submitted as part of the grounds of appeal contained formatting concerns, omissions, discrepancies, and contradictions throughout.
- 9.66. Wind farm developments, by their very nature, are generally located in more rural areas. This has an inevitable and unavoidable impact on biodiversity in the vicinity of the proposed development. The international, national, regional, and county policy framework encourages renewable development of the type proposed. However, although the policy framework supports renewable wind energy it must be demonstrated that it would not have an unduly adverse impact on biodiversity. I consider that the four proposed turbine locations, though somewhat remote from the existing wind farm, would positionally consolidate the overall wind farm more than the locations of the four permitted turbines.
- 9.67. Having regard to the documentation submitted, I consider that the application adequately identifies the potential impacts of the proposed development on biodiversity. The application was considerably aided by surveys carried out over a number of years for the existing and permitted Tullynamoyle wind farm. Detail of bird

and bat surveys in particular are outlined in the chapter. I am satisfied that the surveys submitted are suitably comprehensive and robust and allow for the establishment of a reasonable baseline and assessment of the receiving environment.

- 9.68. The Department of Housing, Local Government and Heritage report, in relation to biodiversity, referenced, inter alia, hen harriers, bats, and otters. On foot of the documentation submitted by the applicant I accept that the proposed wind farm extension site is not in a core hen harrier breeding area, and that the bat activity in the area is low. Substantial detail and survey work has been carried out to allow this conclusion to be drawn. Otters are not likely to be present in this upland location and biodiversity and hydrology mitigation measures during the construction phase in particular would address any prey or habitat concerns downstream where they are more likely to be present. This would also apply to other aquatic species. I note that the department only made a submission on foot of the further information response to the planning authority and has not made a submission on the appeal of the planning application.
- 9.69. Notwithstanding, as noted, for any development such as this proposed, there would be an impact on biodiversity. However, I consider that the documentation submitted allows for a reasonable assessment of likely impacts on biodiversity as a result of the proposed wind farm extension and I am satisfied that the impact would not be unduly adverse such that permission should be refused on the basis of impact to biodiversity.
- 9.70. I have considered the submissions on file, this chapter of the EIAR, and all supplementary information. Wind farms are a common feature of the rural Irish landscape and are encouraged in principle in planning policy as a mechanism to generate renewable energy and reduce the carbon footprint. I am satisfied that the potential for impacts on biodiversity can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative impacts on biodiversity.

Chapter 6 – Soils and Geology

- 9.71. This chapter is one of the more complex EIAR chapters/issues. RPS Group (RPS) was engaged by Leitrim Co. Co. on foot of the planning application to undertake a

geotechnical review of the peat landslide hazard and risk assessment (PLHRA) i.e. chapter 6 of the EIAR. Table 1 of the RPS report was a checker's assessment 'on whether or not adequate and appropriate field survey, peat sampling and analytical methods have been employed to assess peat stability and associated landslide risks in accordance with Scottish PLHRA Guidance'. Details and findings were compared against sections of the guidance and a 'traffic light system' was used to identify RPS's conclusion on the conformance of chapter 6 against the guidance. Conformance was indicated as green (generally in accordance with guidance intent), orange (deviates from guidance intent, some revision or further support required), or red (deviates from guidance intent, significant revision or further support required).

- 9.72. The potential for landslide, and the RPS report, was summarised in the planning authority's first Planning Report. Further information was recommended. Items 1 and 2 referred to landslide potential. Item 1 was comprehensive and included all 'red' (subsections a-k) and 'orange' issues (subsections i-viii) cited in the RPS report. Item 2 requested the applicant to submit a detailed geotechnical assessment of the earthworks.
- 9.73. The applicant effectively resubmitted the entire EIAR as appendix 1 of the further information response, and chapter 6 was the same as in the original EIAR. The response to items 1 and 2 of the planning authority's further information request comprised a document titled 'Chapter 6.0 Soils and Geology – Peat Slide Risk Assessment', i.e. a revised chapter 6, as appendix 2. It was prepared by Whiteford Geoservices Ltd. (WGS) and was dated 14th November 2021. Page 6-2 stated 'The updated Report contains changes to Peat Slide Risk Assessment reporting, presents additional background research, analysis of additional survey data, as well as providing clarifications on the assessment process undertaken'. A table contained in pages 6-5 to 6-12 identified where the responses to Items 1 and 2 of the further information request could be found within the report.
- 9.74. RPS was again engaged by the planning authority to review the revised PLHRA. Four main issues were identified:
1. The peat conditions along the 9.5km underground cable route have been assessed for less than 1.5km. The applicant needs to explain the reason for this, and where necessary carry out a PLHRA.

2. To avoid a reoccurrence of the nearby Shass Mountain failure the qualitative assessment methodology used needs to be sufficiently robust that it would allow the adverse peat conditions at the failure site to be clearly identified.
3. The applicant needs to clearly demonstrate using their qualitative assessment in the PLHRA, or other appropriate means, that the peat conditions on site are different and more stable than the Shass Mountain site.
4. The nearest peat failure is at Shass Mountain where the failure travelled 5km downstream. The applicant should explain why this is not considered as the worst case travel distance and explain their use of 300 metres.

9.75. In its conclusion in the second Planning Report, the planning authority was 'not satisfied that the applicant has demonstrated adequately that the proposed development could not result in a peat landslide occurring which would have significant and adverse effects on the receiving environment'. This issue formed the first of the three reasons for refusal. This has been previously referenced in section 8.1 of this inspector's report.

9.76. Appendix C of the grounds of appeal contains a specific rebuttal by WGS of the reason for refusal and the issues cited by RPS in the review of the further information response to the planning authority. Appendix D contains 'Chapter 6.0 Soils and Geology – Peat Slide Risk Assessment', prepared by WGS and dated 22nd February 2021 [sic]. It is almost identical to that submitted as part of the further information response with the only changes being three additional bullet points to the bottom of 'Summary of Changes Made to Reporting' (page 6-4) and three additional references to the bottom of section 6.11. I have taken this updated chapter 6 to be the relevant chapter for the purpose of the EIAR and have summarised it in sections 9.77-9.95 as follows using the headings used in the chapter. I have summarised appendix C as supplementary information in sections 9.96-9.97.

9.77. Introduction – This updated version of the report is in response to a further information request and 'contains changes to Peat Slide Risk Assessment reporting, presents additional background research, analysis of additional survey data, as well as providing clarifications on the assessment process undertaken'. The format of the original report has been altered to mirror the process laid out in 'Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation

Developments' (2017) (the Scottish guidance). Two separate reports were prepared by WGS ((i) Desktop Study and Walkover Survey for Preliminary Determination of Ground Conditions, and (ii) Preliminary Site Investigation Works for Construction of New Wind Turbines, Access Tracks and Associated Infrastructure), which are included as appendices, and a covering report i.e. chapter 6. A summary of the changes made to the reporting from the original EIAR chapter is set out. A table on pages 6-5 to 6-12 contains the author's review of the relevant further information request issues and details the location within the updated reporting where each change has been made or additional information provided.

- 9.78. The project team is identified. It is stated that risk to the proposed development lands from natural events originating outside of the development has not been considered. Site visits/works undertaken between February 2018 and July 2021 are set out.
- 9.79. Methodology – Details of the desk study, site walk over, and site investigations, which are attached as appendices, are summarised in sections 6.4.2 and 6.4.3. Calculations and assessments were made to provide an analysis of the stability of the peat soils and to further confirm the composition of soils and geology, as well as the distribution of hydrology and slope across the environment at the proposed site.
- 9.80. The majority of the proposed development site consists of blanket peatlands, turbary, and isolated areas of semi-improved grassland with small forested areas. Trial hole investigations indicate peat is underlain by a natural sequence of glacial soils. No intact bedrock was encountered. Groundwater was generally not encountered at any significant volumes. Slope gradients are less than 15° to the horizontal. Peat depth ranges from 0.0 metres to 3.9 metres with an average peat depth of 1 metre.
- 9.81. Receiving Environment – The infrastructure straddles undulating lands with slopes that fall generally to the south west. The predominant land use is rough hill grazing with evidence of past turf cutting and recent tree cutting.
- 9.82. In terms of solid geology land in the vicinity is predominantly underlain by the Lackagh Sandstone Formation and the Gowlaun Shale Formation. The Briscloonagh Sandstone Formation and the Dergvone Shale Formation are also dominant in the area surrounding the site. Superficial soils present within the boundary consist primarily of blanket peat with till derived from Namurian sandstones and shales in the southernmost area.

- 9.83. The National Draft Bedrock Aquifer map indicates the proposed site is underlain by a poor aquifer bedrock which is generally unproductive. Groundwater vulnerability can be classified generally as moderate, with areas in the high to extreme classification. In terms of local hydrology there are a number of drains in place across the site between individual fields and, more prevalently, within peatland areas though 'it was not possible to determine the full extent of the site drainage network'. There are five minor rivers in the vicinity, four of them feeding into Belhavel Lough.
- 9.84. Table 6.2a outlines the peat depth distribution across the survey area. The peat depth is less than 0.5 metres over 24.9% of the area, between 0.5 metres and 1 metre over 34.5%, and between 1 and 2 metres over 33.9% of the area. Table 6.3 shows the variation of peat depth at the proposed turbines and substation locations, and table 6.3a identifies the estimated peat excavation (3,771m³ at each turbine and 71m³ at the substation giving a total of 15,155m³). Table 6.4 assigns risk factors (0-3) to slope angles. Section 6.5.6.2 contains a number of tables with an appraisal of ground conditions at the turbine and other infrastructure locations.
- 9.85. Table 6.5 assigns a risk factor in relation to receptors with the potential to be susceptible to peat instability. An 'exposure factor' of 1 e.g. bog, agricultural land, or undesignated watercourses/drainage to 5 e.g. the settlement of Killarga, is assigned.
- 9.86. Peat landslides are caused by a combination of preconditioning and triggering factors. Preconditioning factors may influence peat stability over long periods and include many drainage-related issues, significant slopes, increase in mass of the peat slope, reduction in shear strength, loss of surface vegetation, and afforestation. Triggering factors are typically of short duration e.g. intense rainfall or snowmelt, earthquakes or blasting, drainage-related, and plant, spoil, or infrastructure loading. External environmental triggers cannot be mitigated though they can be managed.
- 9.87. Table 6.8 states that the turbine and substation locations can be classified as having a negligible to low risk designation, however it does not mean that the risks of constructing within environments where peat is present can be ignored. It is assumed the general procedures outlined in the recommendations section will be adopted and implemented. A hazard ranking is established by multiplying hazard (likelihood of the peat slide event occurring) and exposure (impact that such an event might have at this particular location). How the applicant assessed the various peat slide hazards and

exposures at the turbine locations, substation location, and new track sections, and the hazard ranking levels, to conclude that all developments have a low hazard ranking level (project may proceed through the use of mitigation techniques applied during construction) except for T22 which had a negligible hazard ranking (project should proceed with monitoring and mitigation of peat landslide hazards at this location as appropriate), is set out between pages 6-38 and 6-47.

- 9.88. Construction mitigation will further reduce the hazard rankings. The recommendations section (section 6.5.8) contains a number of procedures which will have the effect of reducing the hazard ranking associated with peat instability e.g. placement location of excavated spoil, engineering practices, backfill excavations as soon as possible, and staff training. Detail of spoil disposal is set out. Table 6.19 outlines six hazard risk reducing factors which, post-mitigation, would further reduce the hazard rankings previously set out. This would bring T16, T17, the substation, and T17 track into the negligible hazard ranking. Though the other infrastructure would remain in the low hazard ranking their 'score' would be reduced.
- 9.89. Potential Impacts of the Development – During the construction phase these include earthwork activities (excavations), potential for bog failure (they have tended to occur on blanket bogs in the west where rainfall is highest with causal/contributory factors including slope, the depth of peat and its relationship to humification, pore water pressure, shear vane strength and other parameters, precipitation over the last thirty years, antecedent weather conditions such as heavy rainfall following a drought, and excessive interference), and impact on water quality (suspended solids release during excavations, risk of pollution from hydrocarbons, and temporary sanitation).
- 9.90. In the operational phase the rate and amount of surface water run-off will increase because of the replacement of vegetation etc. with hardstanding in areas. Water quality could be affected if regular maintenance and monitoring are not undertaken.
- 9.91. Mitigation Measures – During the construction phase, in terms of earthwork activities, sub-soil removal and any additional changes to the site hydrology should be minimised. Appropriate engineering controls will mitigate potential impacts on water quality. A construction phase management plan will be in operation. Notwithstanding that the site is a low risk for slope failure a number of best-practice mitigation measures are recommended relating to e.g. excavations, drainage-related management

measures, and measures noted in table 6.19. Any groundwater ingress should be diverted to a drainage channel and attenuated before release.

- 9.92. During the operational phase, the design of roadside drains and hardstandings must prevent hydraulic loading of the surface water network and provide sufficient attenuation of suspended solids. Surface water flows should not be impeded. Recommended measures to mitigate pollution to surface and groundwaters include a regular programme of environmental site maintenance, and fuels should not be stored on site except for small volumes related to the substation.
- 9.93. Residual Impacts of the Development – Those that are most likely to occur include a change in ground conditions with the replacement of natural materials by concrete etc., a local deterioration in water quality during construction will be mitigated prior to exiting the site boundary, an increased surface water run-off should not have a significant impact on the hydrology of the site, and some artificial drainage infrastructure will mimic natural conditions. The potential for peat landslide can be expected to reduce after decommissioning.
- 9.94. Monitoring – This includes ‘regularly’ maintaining drainage systems, inspecting slopes, disposal sites, and roads, and analysing watercourses.
- 9.95. Conclusion – Successful adherence to mitigation measures allows the optimal level of risk to be attained with respect to peat slide. Where peat depth is greater than 1.5 metres, ‘floating’ road construction is the preferred method of access road emplacement. Peat slide risk analysis has indicated a low to negligible risk of instability should all mitigation and recommendations be adhered to and the project ‘should have no adverse effects on the soils, geology or surface water aspects in the vicinity’ of the development.
- 9.96. Supplementary Information – Appendix C of the grounds of appeal contains a ‘Response to Planning Refusal Ref: P21-57’ document, prepared by WGS and dated 25th February 2022. The document outlines the four items referenced in section 9.74 of this inspector’s report, as specified in the RPS review of the further information response, and addresses each in turn. The responses can be summarised as follows:
1. Peat conditions along the 9.5km long underground cable route only assessed for less than 1.5km – The cable route within the wind farm boundary has been probed to determine peat depth as it will not be placed within an existing

roadway. Between the wind farm and Corderry substation the route will be within the public roads and the applicant does not foresee a potential issue with ground stability along this section.

2. To avoid a re-occurrence of the Shass failure the qualitative assessment methodology needs to be sufficiently robust that it would allow the adverse peat conditions at the Shass failure site be identified – An analysis of the peat condition in the vicinity of Shass Mountain was undertaken to determine what the hazard of peat landslide would have been prior to the landslide event. Details were taken from the ‘Shass Mountain Peat Landslide Factual Report’ prepared by RPS and dated 16th October 2020. A site visit was conducted by WGS in July 2020. A hazard ranking of 12 (medium risk) was calculated if only the impact on the local watercourse was considered. It would be 24 (high risk) if potential consequent damage to the Dawn of Hope Bridge was considered. WGS states that in such a scenario they would not have advocated development. ‘Shass Mountain would have been between 1.7 and 3.4 times more likely to fail than the most sensitive element’ of the proposed development. Annex 1 contains a very brief summary of the July 2020 visit and two photographs.
3. The applicant needs to clearly demonstrate that the peat conditions on site are different and more stable than the Shass Mountain site – If the findings of the analysis for Shass Mountain is compared to that from Tullynamoyle the difference in peat conditions is evident. From the preliminary hazard ranking plot, as per annex 2 of appendix C, there are negligible, low, and medium risk categories at Tullynamoyle. All medium risks were avoided. There were no high risk areas, unlike at Shass. The Shass landslide was a natural event. The consequences are the very reason why peat stability is assessed at upland power generation developments. Comparison of ground conditions between both sites indicate:
 - At Shass Mountain the forestry bounding the site affected by the landside channelled significant volumes of surface water towards the landslide zone. This is not the case at Tullynamoyle.

- Shear vane testing by WGS in July 2020 immediately above the landslide zone yielded shear strengths lower on average than recorded at Tullynamoyle previously.
- Similarly, assessment of peat decomposition recorded higher decomposition.
- In July 2020, peat thickness within the forestry at Shass, north of the landslide zone, was <3 metres in a number of locations. This is important as it means the peat contains a large proportion of weak catotelm, a characteristic component of peat prone to bog burst. In contrast to the overlying permeable acrotelm, it is only weakly permeable. The weak permeability causes it to swell during heavy rainfall making the peat mass very sensitive to external forces and prone to failure. It is only present in Tullynamore in isolated small pockets but appears to have been prevalent at Shass.

The combination of issues resulted in a significant elevation in the hazard ranking over Tullynamoyle.

4. Applicant to explain why 5km was not considered as a worst-case travel distance and their use of the 300 metres distance – The various buffers applied for distances to sensitive receptors are based on the travel distance for a peat landslide before it reached that receptor. They are based on GWS’s experience of peat landslide where they move over terrain of the similar slope and composition and often terminate through the action of surface friction alone. Where peat enters a watercourse the distance it can continue to travel is dramatically increased. It is not possible to predict how far peat could flow in such a system and how much it will contribute to downstream damage. In these cases a range of values can be applicable.

9.97. Appendix C also addresses other queries raised by RPS in their second review report. These can be summarised as follows:

- 100 metre spaced probes cover the turbines and infrastructure. To do it across the whole site would mean numerous probes within dense forestry and outside the site boundary. At the time T22 was surrounded by inaccessible forestry but peat was shallow where probing was possible.

- Vane tests were undertaken at the turbines and substation at approximately 200 metre centres. Since peat strength does not tend to vary as rapidly as peat depth less data is acceptable. The cable route will be within the public road and peat stability assessment is not considered appropriate.
- BS6031 is still currently valid. Text has been amended to state 'dry' instead of 'drained'.
- The applicant's report does not state that peat cannot move on a 0-5° slope. The report recognises the contribution to instability arising but designated the 0-5° class to be of minimal influence when considering sloping ground. Other factors are of greater influence on such slopes.
- The applicant's report was revised to include appropriate reference to historical aerial photography.
- The applicant requires the vane test to be unfactored in order to record fibre interaction so as to better understand the behaviour of the surface peat layers.
- After mitigation, the development has at most a low (7/25) hazard ranking potential for landslide. Shass has a medium to high (12/24 / 25) ranking. The Tullynamoyle site is clearly not the same.
- Spoil storage is in line with guidance and has been used in more than 84 no. other studies without incident.

9.98. Appendix F of the grounds of appeal contains a 'Response re. Hydrology & Hydrogeology' document, prepared by Minerex Environmental, and dated February 2022. This document includes a response to the first reason for refusal. It notes the low hazard site ranking and the comparison to Shass Mountain. The response states, inter alia, 'In the unlikely event (low risk) that a failure occurs the most significant environmental receptors at the site are downgradient surface water features ... qualifying significance of receptors in terms of peat stability is an important part of the stability risk assessment process. Surface water features are considered to be of moderate significance, relative to non-critical infrastructure (low significance) and communities, dwellings and buildings (high significance) ... the low risk classification at the site indicates that any potential stability issues at the site will likely be localised'.

Relevant mitigation measures related to hydrology are also referenced in the brief response to this reason for refusal.

9.99. Assessment and Conclusion – The issue of peat stability and the potential for the proposed development to result in a landslide is a significant issue with the proposed development and it comprised the planning authority's first reason for refusal. It was an issue raised in third party submissions and, given the recent history of landslide in the wider vicinity, I understand and accept the concern. This section should be considered along with section 8.1 of this inspector's report which concisely addresses the reason for refusal and refers to this chapter of the EIAR.

9.100. As outlined, the original EIAR chapter was subject of a peer review by RPS on behalf of the planning authority. A revised chapter 6 was then submitted which was again subject of an RPS peer review. The application was refused with the landslide issue forming the first of the three reasons for refusal. The planning authority was not satisfied that the proposed development could not result in a peat landslide, the PLHRA failed to clearly demonstrate that the peat conditions on site are different and more stable than at the Shass Mountain failure, and the extent of environmental impact occurring from a failure had not been adequately considered.

9.101. Four main deficiencies in the EIAR chapter were identified by RPS. The applicant set out responses to these issues in the grounds of appeal. My assessment of the four issues is as follows:

1. Probing was carried out along the 'private' section of the existing track/road (on site inspection there was a gate across the road close to where the probing ceased). No probing was carried out on the local or regional roads which form the remainder of the grid connection route as the applicant does 'not foresee a potential issue with ground stability along this latter section of the cable route'. I agree with the applicant in this regard. Much of the grid connection route is along well established, low-lying, and relatively flat public roads where peat, or risk of ground stability from a relatively minor works such as underground cabling, is not a concern.
2. The highest hazard ranking calculated by the applicant for proposed development infrastructure, prior to mitigation, was 10 for the T23 track. This is a 'low' hazard ranking, albeit at the top of that scale. A similar exercise was

carried out in the grounds of appeal for the Shass site, which GWS appear to have visited shortly after the landslide occurred. This resulted in a score of 12 (medium hazard ranking level), or 24 (high hazard ranking level) if the damage to the Dawn of Hope Bridge is considered. It is stated GWS would not have advocated development where medium or high hazard categories were identified. The applicant has set out in detail why the two sites are different in terms of hazard ranking, and of note is the fact that a site inspection was carried out by the applicant's team shortly after the landslide occurred so there is on-site knowledge of the specific area. I consider that it has been robustly demonstrated by GWS that the peat hazard ranking levels are/were different between the two respective sites and I accept the conclusion in this regard.

3. There is a notable overlap between issues two and three as set out in the RPS report, and the previous paragraph should be taken into consideration in this regard. The Shass landslide was a natural event. GWS refer to the location of forestry, the shear strength of peat immediately above the landslide zone, the extent of decomposition, and the thickness of the peat in terms of the differences between the Tullynamoyle and Shass sites, and provides an explanation as to why the Shass landslide occurred. Having regard to the applicant's reasoning, with reference to the fact the applicant's team inspected the Shass area shortly after that landslide, I accept that there are significant differences between both sites such that the Shass incident does not affect the likelihood that the wind farm extension area is more likely to experience a peat slide event.
4. The fourth issue referenced by RPS relates to the 300 metres worst-case travel distance cited by the applicant, notwithstanding the 5km distance associated with the Shass landslide. Appendix C of the grounds of appeal states that when peat enters a watercourse the distance it can continue to travel is dramatically increased, as opposed to over land where it can stop through the action of surface friction. 'It is not possible to predict how far peat could flow in such a system and how much it will contribute to downstream damage. In these cases a range of values can be applicable'. I note that the ground levels of the areas where the proposed turbines are to be located, in particular T16, T17, and T23, while on upland peatland areas, are in locations where ground levels are

relatively undulating, and surface friction would play a part in any land slide event. The turbines are not proposed on steeply sloping hill sides. This would reduce the risk of a significant event from occurring as a result of the proposed wind farm extension itself.

There have been a number of previous planning applications for the various Tullynamoyle wind farm stages, and the risk of landslide has not been a significant issue with these, certainly in so far as any refusals of applications. The proposed turbines are at a lower ground level than many of the existing turbines. The fact that a landslide may have occurred somewhere on a particular mountain does not mean it would occur elsewhere on that mountain. I am satisfied that the applicant has adequately demonstrated that there are differences in the stability issues such that it is appropriate to consider a grant of permission.

In my opinion, the documentation submitted in relation to the issue of soils and geology, slope stability etc., taken in full, is adequate to allay the understandable concerns expressed in the submissions received in terms of downstream impacts of any landslide that could potentially occur.

9.102. I note that the planning authority/RPS have not submitted any updated observations on the content of the grounds of appeal in relation to soils and geology/landslide and has left it to the Board to make the decision.

9.103. In relation to accidents and disasters, peat slide is one of the three main concerns. Fire was briefly referenced in chapter 4 and flooding is considered in the following chapter. Given the recent history in the area I consider peat slide to be the primary area of vulnerability in this regard. Notwithstanding, the applicant has demonstrated that the risk of a peat slide occurring is low, and I accept this conclusion. While it is not possible to rule out the possibility of a peat landslide, and as noted the Shass failure was unrelated to a wind farm, the presence of the existing and permitted Tullynamoyle wind farm, the support for development of the type proposed, and the applicant's documentation including the supplementary information in the grounds of appeal, indicate that the proposed turbines are acceptable at this location.

9.104. Having regard to the foregoing, I have considered the submissions on file, this chapter of the EIAR, and all supplementary documentation. The content of the chapter is

interlinked with other factors, such as hydrology, and these are assessed in more detail elsewhere. I am satisfied that the potential for impacts on soils and geology, including peat landslide, can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative impacts on soils and geology.

Chapter 7 – Hydrology and Hydrogeology

- 9.105. This chapter was prepared by Minerex Environmental Ltd. Chapter 7 of the EIAR submitted with the FI response to the planning authority has been used for this section. Supplementary information was submitted with the grounds of appeal and is also referenced in this section.
- 9.106. Assessment Methodology and Significance Criteria – Relevant legislation and guidance is referred to, including the Water Framework Directive (WFD). Desk study and field work (in October 2020) was carried out. Definitions of criteria for rating site attributes, criteria for rating site sensitivity, describing the magnitude of impacts, qualifying the magnitude of impact on hydrological and hydrogeological attributes, and weighted rating of significant environmental impacts are set out in tables 7.2 to 7.6. Table 7.7 shows the result of scoping and a response to points raised by consultees i.e. Inland Fisheries Ireland (IFI), demonstrating where the design of the development has changed in response to specific issues raised.
- 9.107. Baseline Description – A site and land-use description is outlined. Rainfall data is graphed in graph 7.1 and 7.2 and evapotranspiration is also referenced. Regional and local hydrology is set out. Maps illustrating surface water features, WFD information, and additional drainage layouts are presented in appendices. There is extensive artificial drainage associated with commercial forestry and peat cutting. On-site flood risk is not considered to be a concern. Baseline surface water sampling was carried out at three representative locations (same sampling locations as the consented wind farm (hence the SW4, SW5, and SW6 numbering)). Surface water hydrochemistry is detailed in section 7.3.9. Surface water draining from the site is of moderate to good quality, generally.

9.108. The hydrogeology of the area is also set out in some detail. Though the site is underlain by areas classified predominantly as moderate groundwater vulnerability with a large portion classified as low vulnerability, the range of groundwater vulnerability in the general area of the site spans the entire rating spectrum. The groundwater recharge rate is low-very low. The vast majority of water/rain introduced to the site will drain as surface water runoff. Water level data obtained from six phreatic piezometers installed near T16 indicates that there is a correlation between bog water level and distance from existing linear drainage features (drain and existing access track). Though data is limited, it is in keeping with principals of peat hydrology/hydrogeology. Groundwater flow directions are presumed to follow the topography of the area. Groundwater flow paths are considered to be short. All receptors (streams, rivers, groundwater) are considered to be highly sensitive receptors. '(G)roundwater or bog water in areas of intact blanket bog or intact peat areas in designated areas are considered highly sensitive. In contrast, groundwater or bog water in areas of cutover peat or in areas associated with extensive drainage ... is not considered highly sensitive'.

9.109. The majority of the proposed access track is in areas of relatively low sensitivity though a portion will be within the SAC. No new watercourse crossings are required but three of the four will require upgrading, one for T16 and two for T23.

9.110. Assessment of Potential Impacts – The receiving environment is considered as ranging from low sensitivity (groundwater, bedrock aquifer) to very high sensitivity (surface water, bog water in areas of intact habitat and SAC). There are no indications that commercial forestry or peat harvesting 'has had unusual or significantly adverse impacts', though they 'are likely to apply pressure to the receiving surface water network and potentially contribute nutrients and/or suspended solids on occasion...' '(S)imilarly there are no indications that the ... operational wind farm has had unusual or significantly adverse impacts with regard to the hydrology or hydrogeology of the site'. In a do-nothing scenario the existing land uses will continue.

9.111. Potential adverse effects are set out in some detail in section 7.4.2. These are, in relation to potential effects on surface water and groundwater quality: release of suspended solids, release of hydrocarbons and storage, release of waste water sanitation contaminants, and release of construction or cementitious materials. Potential effects on hydrologically connected designated sites, potential effects on

local groundwater supplies (wells), potential effects on hydrogeology (groundwater and bog water levels), and increased hydraulic loading are also considered in some detail.

9.112. An assessment of the effects of the construction phase through earthworks, excavation dewatering, diversion, enhancement, and construction of drainage, and watercourse crossings are set out in section 7.4.3. During the operational phase, increased hydraulic loading is the only issue considered applicable, though this is considered 'an adverse but imperceptible impact of the development'. No new impacts are anticipated during the decommissioning phase.

9.113. Mitigation Measures and Residual Effects – Design phase mitigation includes mitigation by avoidance (the layout is 'the best layout design available for protecting the site's existing hydrological regime, while at the same time incorporating and overlaying engineering and other environmental constraints as detailed in this EIAR'), including utilising existing infrastructure. Surface water buffer zones are applied wherever possible though some significant infrastructure units will overlie existing drainage networks. Some hydrologically connected drains will require diversion and modification at T16, T17, and T23.

9.114. Construction phase proposed mitigation measures are set out in some detail in section 7.5.2. Some of these can be briefly synthesised as follows:

- Earthworks – a materials management plan will be established, control of stockpiles, weather-related construction practices, and required drainage in advance of excavation.
- Excavation dewatering – advance drainage whenever possible, control of dewatering flow rate, use of a silt bag for pumped waters, use of a settlement tank, and no discharge directly to the drainage or surface water network.
- Release and transport of suspended solids – surface water runoff management systems will be installed prior to the main construction activities, management of diffuse surface water runoff, silt fences, dewatering mitigation, stilling ponds, check dams, discharge to land via buffered drainage outfalls, use of flocculants, monitoring, and maintenance of surface water runoff control infrastructure.

- Release of hydrocarbons – use of a bunded fuel station, regular checking of plant, use of oil absorbent booms, and spill kits.
- Construction and cementitious materials – use of precast concrete where possible, high standard shuttering, concrete pours during periods of minimal precipitation, spill kits, standing water will be pumped out of excavations before pouring concrete, and no storage of concrete on-site.
- Watercourse crossings – designed to facilitate peak discharge rates, likely use of a closed culvert, use of a detailed construction management plan, and a number of measures are set out for implementation during any in-stream works.
- Groundwater contamination – Similar mitigation to hydrocarbons plus use of temporary portable sanitary facilities, and attenuation of suspended solids.
- Increased hydraulic loading and attenuation – Similar mitigation to release and transport of suspended solids. A conceptual drainage model to be applied at proposed turbine hardstand locations is set out.
- Bog water levels – At intact bog/designated areas the depth of constructed drainage will be a maximum 0.5 metres deep, and attenuation such as check dams will be established at regular intervals within drainage channels along the proposed access track.

9.115. To ensure effective implementation of mitigation measures, monitoring etc. it is 'recommended' that a Clerk of Works is assigned during the construction and operational phases to advise on environmental issues and monitoring compliance, though they 'will not be responsible for implementing measures'. Recommendations for site monitoring are outlined, including that a 'detailed inspection and monitoring regime, including frequency will be specified in the Construction Management Plan'. Emergency response measures are also set out. No new impacts are anticipated during the decommissioning phase. Similar mitigation to the construction phase will be implemented, though it is recommended that the potential for restoration following decommissioning is evaluated closer to the time.

9.116. During the construction phase the residual impact from the release of suspended solids is neutral, and in the unlikely event of a significant spill of hydrocarbons, waste water, or construction waste occurring, is moderate/significant. The impact to

downstream designated receptors 'is envisaged to be neutral', with the exception of an accidental spillage. The scale of the impact on bog waters within a few metres will be minimised. Though the scale of the impact on Boleybrack Mountain SAC is slight the magnitude is classified as moderate/significant. There is no impact to local groundwater supplies envisaged. Attenuation features in drainage channels will promote bog water levels in the immediate area. The net increase in hydraulic loading during operation is 'likely to be imperceptible relative to the scale of the discharge rate in the receiving surface water system at sensitive location (flood risk) downstream'. Residual impacts of decommissioning are likely positive.

9.117. As the residual impact in terms of water quality is envisaged to be neutral, assessing cumulative impact is not applicable. Any contamination incident would likely be temporary and unlikely to contribute to cumulative effects. As hydraulic loading is envisaged to be neutral to positive (imperceptible), assessing cumulative impact is not applicable. 'Allowing for worst case whereby no net increase of runoff is attenuated, and allowing for 10 times the area of similar developments within the catchment (1 order of magnitude), the cumulative would likely remain imperceptible relative to the scale of the discharge rates at sensitive receptors (areas with flood risk) in the receiving surface water network'.

9.118. Supplementary Information – Section 4.6 of the grounds of appeal cover document addresses issues raised in the report received by the planning authority from the Department of Housing, Local Government and Heritage. The applicant notes that the report from the department was received at further information stage which afforded the applicant no opportunity to respond to the issues raised. Table 4.1 of the grounds of appeal document sets out responses to the department's submission which relates to, inter alia, hydrology, peat stability, water quality, and biodiversity. The table states that hydrology issues are addressed in the updated biodiversity chapter, the soils and geology and hydrology and hydrogeology chapters, and the updated NIS, and include mitigation measures.

9.119. Appendix F is a 'Response re. Hydrology & Hydrogeology', prepared by Minerex Environmental dated February 2022. This report relates to the reasons for refusal of the application by Leitrim Co. Co.

- Section 2.1 relates to the first reason for refusal (landslide). This has been referenced in section 9.98 of this inspector's report. Relevant mitigation measures within the EIAR chapter are summarised.
- Section 2.2 relates to the second reason for refusal (Boleybrack Mountain SAC). Attachments reproduce layout plans showing hydrology and the SAC, habitat classifications, and both overlaid. The area has been heavily modified by drainage networks. A portion of proposed access road is the most significant new impact within the SAC boundary, with some hardstanding within the SAC in proximity to T17. The piezometer study is referenced. 'The development layout, nearly in its entirety in the area being discussed here (Northern Portion/connected to SAC) is impacted by drainage features as baseline'. Mitigation measures will promote the infiltration of runoff to ground, reducing the scale of the impact. None of the SAC habitats in the proposed track line are Annex I habitats therefore the objectives of the SAC are not compromised. Outside the SAC T16, T17, and T23 are within heavily modified areas. The addition of drain blocks and check dams 'will efficiently promote higher bog water levels and healthier peatlands in the vicinity of the development layout'. Mitigation measures also address potential impacts to surface water quality in the receiving surface water network. A SWMP will be submitted to the planning authority for approval.
- Section 2.3 relates to the third reason for refusal (cumulative impacts). In the context of hydrology and hydrogeology, the objectives of the mitigation measures include a neutral impact to water quality at a minimum, neutral to beneficial impact to hydrological response to rainfall, and minor adverse (in keeping with baseline and not to Annex habitats) to beneficial impact to groundwater/bog water levels. Should mitigation measures be deployed adequately and the development managed appropriately 'the development will not contribute to any significant extent to cumulative impacts on the receiving environment in the area'.

9.120. Assessment and Conclusion – The area of hydrology and hydrogeology is complex and there are significant overlaps with other chapters of the EIAR such as biodiversity and soils and geology, as well as the AA process. Taken as an issue in isolation it did

not form a specific reason for refusal, though it forms part of general issues relating to landslide potential, effect on Boleybrack Mountain SAC, and cumulative impact. Impact on Boleybrack Mountain/AA is more fully considered in section 10 of this inspector's report.

9.121. The Department of Housing, Local Government and Heritage submission refers to this issue, though the impact in so far as it affects peat-related QI habitats of the SAC is considered in section 10. The area around proposed T16, T17, and T23 and their associated infrastructure is clearly shown on layout plans as being highly modified by historic artificial drainage. With adequate implementation of the hydrological mitigation I do not consider that the impact on hydrology or hydrogeology from pollutants entering the water system, particularly during the construction phase, is a significant concern. This issue of the potential for hydrological and hydrogeological pollution at and downstream of a development site is always a consideration in development of this type. It is not unique to this particular extension site or the existing wind farm. The mitigation measures proposed are commonly used and well-proven. I do not consider this site to have any particularly unique characteristics in terms of its hydrological environment.

9.122. A significant number of relevant mitigation measures were set out in the EIAR chapter. As with mitigation measures in other chapters I consider it appropriate that all mitigation measures using the terminology 'should' or 'could' etc. should be conditioned in any grant of permission to be interpreted as 'shall' or 'will' be carried out, unless otherwise agreed in writing with the planning authority.

9.123. Hydrology and hydrogeology is a significant consideration at this location given the number of watercourses and drainage features throughout the proposed development area and the implication for other issues such as biodiversity and AA. Given the upland location these watercourses are not particularly substantial. I consider the EIAR has addressed the issue of hydrology and hydrogeology in detail. Flooding, as referenced as a possible major accident or disaster, is not considered to be an issue of undue significance in this chapter. Given the limited extent of proposed hardstanding and the nature of the receiving environment, I do not consider that it is an issue of concern. I note that the department only made a submission on foot of the further information response to the planning authority and has not made a submission on the appeal of the planning application.

9.124. I have considered the submissions on file, this chapter of the EIAR, and all supplementary information. Some of the impacts raised in the grounds of appeal are interlinked with other factors and these are assessed in more detail elsewhere. I am satisfied that the potential for impacts on hydrology and hydrogeology can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative impacts on hydrology and hydrogeology.

Chapter 8 – Air and Climate

9.125. This section assesses the air quality environment of the area and potential effects on air quality during the construction, operation, and decommissioning phases, recommends mitigation, and assesses residual effects. Chapter 8 of the EIAR as submitted with the further information response to the planning authority has been used for this section.

9.126. Assessment Methodology and Significance Criteria – The assessment of air quality and climate involves a desk study, evaluation of potential effects, evaluation of the significance of effects, and identification of measures to avoid and mitigate potential effects. The legislative framework is outlined. Table 8.1a sets out the limit values of the Clean Air for Europe (CAFE) Directive. Target values for ozone are set out in table 8.1b.

9.127. The proposed site is located in EPA Air Quality Zone D (the other three zones being in urban areas with greater than 15,000 population). The existing climate (temperate, oceanic) and air quality conditions (generally Ireland is recognised as having some of the best air quality in Europe) are outlined.

9.128. Do-Nothing Impact – The opportunity to reduce emissions of carbon dioxide, nitrogen oxides, and sulphur dioxide would be lost due to continued dependence on fossil-fuel energy rather than renewable energy. There would be an indirect, negative impact on air quality.

9.129. Potential Impacts of the Proposed EIA Development – The main potential impact on air quality during construction is from dust. Dust nuisance is generally most likely to occur within 100 metres of the source e.g. turbine bases and hardstandings, and access roads. Emissions from plant and machinery during construction is also a

potential impact. The time it would take to displace emissions equivalent to those used in manufacture and construction of the development is stated as approx. 13 months.

9.130. During the operational phase there will be an imperceptible negative impact from dust (light vehicles on access tracks once or twice a week). Reduction in GHG emissions will be a small positive impact. Decommissioning phase impacts are likely to be similar to the construction phase though concrete bases, hardstandings, and access tracks will be left in situ, the concrete bases and hardstandings being covered and revegetated.

9.131. Mitigation Measures and Residual Effects – Good practice construction phase procedures are outlined, and similar will be employed during decommissioning. No mitigation is proposed for the operational phase. Given the distance to sensitive receptors potential cumulative impact is predicted to be slight, negative, temporary, and direct.

9.132. Residual Impacts of the Proposed Development – During the operational phase there is a slight, positive, long-term effect.

9.133. Summary of Significant Effects – None identified given the mitigation measures.

9.134. Statement of Significance – There are slight negative effects during construction on air quality and a slight, positive, long-term effect otherwise. Potential effects of the proposed development on air quality and climate are considered not significant.

9.135. Assessment and Conclusion – I have considered the submissions on file, this chapter of the EIAR, and all supplementary documentation. A main focus of overall planning policy is to reduce the carbon footprint and emissions, and renewable energy is one of the solutions to this issue. The applicant states that it would take approximately 13 months to displace the emissions equivalent to those used in manufacture and construction of the development. Therefore for the vast majority of its lifetime the proposed development would positively contribute to the reduction of carbon emissions and would play a small part in helping achieve national targets in this regard. I am satisfied that the negative impacts on air and climate are slight and temporary and that, overall, there would be a positive impact on air and climate as a result of the proposed development.

Chapter 9 – Noise

- 9.136. The section provides a baseline description of the background noise environment and assesses the potential impacts that the construction, operation, and decommissioning phases will have on receptors, including potential cumulative impacts. Appropriate mitigation measures are documented, residual effects identified and assessed, and cumulative impacts of all turbines within 3km assessed. Chapter 9 of the EIAR as submitted with the further information response to the planning authority has been used for this section.
- 9.137. Assessment Methodology and Significance Criteria – Relevant legislation and guidance is set out. Five locations for noise monitoring were selected with baseline monitoring undertaken between 26th January and 22nd February 2018. The computer modelling software used to predict noise levels is described. The operational noise assessment methodology comprises identification of potential receptors, measurement of existing background noise levels, prediction of the likely noise levels at each receptor, and comparison of predicted levels with noise limits. Cumulative effects from existing and consented turbines within 3km of noise sensitive receptors have been taken into consideration ‘as the potential for cumulative effects beyond this distance is considered negligible’. The 19 no. existing and permitted turbines are therefore included. Noise generation in the construction phase is also addressed.
- 9.138. Baseline Description – Houses H1, H3, H13, H18, and H22 were selected for baseline noise surveys on the basis of their location. Prevailing background noise levels are set out in table 9.9.
- 9.139. Assessment of Potential Effects – There will be construction phase noise, but it will be temporary. All material will be imported to site, there will be no quarrying. Typical noise levels from construction works are set out in table 9.10. Decommissioning noise levels are assumed to be similar to construction levels though some roads will be left in place. Table 9.11 shows predicted worst-case construction noise levels at H13 and H24 (nearest houses), H12 to the permitted substation, and the grid connection works (58-65 LAeq dB at 40 metres and 52-60 LAeq dB at 80 metres as example distances). Maximum predicted construction noise levels will exist for no more than one week equivalent i.e. turbine foundations, hardstandings, and substation, with predicted

noise levels within National Roads Authority guidelines. For cable laying, maximum noise levels will pertain for no more than two days equivalent at any receptor.

9.140. Table 9.12 sets out the predicted noise levels at varying wind speeds from the four proposed turbines to H1 – H30. The highest predicted noise level is 35.9 L90 dBA at wind speeds of 8m/s and higher at H24, therefore all are well within the accepted 43 dB limit. Noise contours are shown on figure 9.2. Charts 9.1 to 9.10 present the daytime and night-time operational assessment for H1, H3, H13, H18, and H22.

9.141. Cumulative Effects Assessment – An assessment of the cumulative effects of noise from the 23 no. proposed, existing, and permitted turbines has been undertaken. The same locations are used in the cumulative assessment and a worst-case scenario is assessed. Table 9.14 gives the predicted cumulative noise levels for all receptors. The highest predicted noise level is 42.9 L90 dBA at wind speeds of 9m/s and higher at H13.

9.142. Mitigation Measures and Residual Effects – No specific construction or decommissioning phase mitigation measures are required though good practice will be followed. In terms of operational noise, the proposed development has been designed to comply with the 2006 Guidelines.

9.143. Summary of Significant Effects – There are no significant effects.

9.144. Statement of Significance – Predicted noise levels during operation are found to be compliant with the noise limits in the 2006 Guidelines, including cumulative impacts.

9.145. Assessment and Conclusion – I have considered the submissions on file, this chapter of the EIAR, and all supplementary documentation. The proposed development is in a rural location with the proposed turbines relatively remote from existing houses. I do not consider that the construction phase would result in undue noise impact to residents, and any such impact that may arise would only be on a temporary basis. There is already a significant wind farm in the vicinity, and I do not consider that the cumulative noise impact from the operational phase, as demonstrated, would have any undue adverse impact on the amenity of residential property or noise sensitive receptors in the vicinity.

9.146. It is implied in the chapter that the Enercon E-126 turbine with a 92 metres hub height is used as the candidate turbine. The response to the Board's further information

request relating to the specific turbine to be used indicates that an alternative turbine could be the Vestas V-126. A letter from Noise and Vibration Consultants Ltd. was submitted as part of the response. It states, inter alia, that 'The maximum sound power level of the Vestas 126 turbine is 0.9dBA lower than the maximum noise output from the Enercon E-126. Using the Vestas 126 turbine will lower the noise levels at all receptors'. Therefore, should the Vestas turbine be used, it would have less of a noise impact than the Enercon turbine, albeit slightly. I do not consider this invalidates or would have a material impact on the information contained within this EIAR chapter.

9.147. Having regard to the foregoing, I am satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative noise impacts.

Chapter 10 – Shadow Flicker and Electromagnetic Interference (EMI)

9.148. This chapter describes and assesses the potential shadow flicker and EMI effects and also assesses the potential cumulative impacts with the existing and permitted turbines. Chapter 10 of the EIAR as submitted with the further information response to the planning authority has been used for this section.

Shadow Flicker

9.149. Assessment Methodology and Significance Criteria – Significant effects occur where shadow flicker exceeds 30 minutes per day or 30 hours per year. All properties within 10 rotor lengths (1270 metres) of a turbine have been included in the calculations (inspector's note – The applicant's further information response to the Board indicates a 126 metres rotor length i.e. 1260 metres for 10 rotor lengths. I do not consider this minor change would have a material impact on the results produced in the EIAR chapter). Computer modelling calculates a theoretical worst-case scenario e.g. the sun is always shining, the turbines are always moving, and the rotor is always directly facing a given property. The model also outputs a realistic scenario using likely sunshine and wind direction frequency data, for the annual hours per year metric only.

9.150. Baseline Description – Houses potentially affected are shown on figure 2.1 and listed on table 10.1. There are properties greater than 1270 metres from a proposed turbine which are included. These were included in previous studies and are retained for cumulative assessment purposes. There are 30 no. properties in total.

- 9.151. Assessment of Potential Effects – Summarised detail of the shadow flicker times for each house are set out in table 10.2. Ten houses would be affected. The worst affected would be H24 (24.6 potential hours of shadow flicker per year), H26 (78 potential shadow days per year), and H23 (0.51 potential maximum hours of shadow flicker per day). Only T22 and T23 (primarily) would affect properties. No property would theoretically experience 30 hours per year with only one property potentially affected for greater than 30 minutes per day.
- 9.152. Assessment of Cumulative Shadow Flicker Impact – Summarised cumulative detail of the proposed, existing, and permitted turbines is set out in table 10.3. Only H1 and H2 are affected cumulatively. H1 would have 40.2 hours potential hours of shadow flicker per year and 0.55 potential maximum hours of shadow flicker per day (22.5 hours and 0.45 hours respectively for H2).
- 9.153. Assessment of Actual Shadow Flicker Impact – Likely projected occurrences were assessed by historical data. Expected shadow flicker values per year likely to be experienced is shown on table 10.4. The maximum expected is 15.3 hours per year on H18 created by a permitted turbine. However, H1 and H23 do have the potential to be affected by shadow flicker for in excess of 30 minutes per day.
- 9.154. Mitigation Measures and Residual Effects – It is proposed that a shadow flicker control system be fitted to T22 and T23 during operation. A cumulative shadow flicker effect is not expected to be an issue of concern.
- 9.155. Summary of Significant Effects – No significant effects have been identified. A shadow flicker control system will be installed on T22 and T23.
- 9.156. Statement of Significance – No significant effects have been identified.
- 9.157. Conclusion – Mitigation will be carried out to eliminate the potential of shadow flicker to cause a nuisance.

Electromagnetic Interference (EMI)

- 9.158. EMI is any type of interference that can potentially interfere with the effective performance of electronic devices.
- 9.159. Assessment Methodology and Significance Criteria – The views of telecommunications providers were sought. Any potential effects during operation are classified as long-term effects.

9.160. Baseline Description – There is a Three/Eir/Vodafone mast approx. 970 metres east of T22. Telecommunications companies were contacted for their responses as set out in appendix A.

9.161. Assessment of Potential Effects – Electromagnetic emissions from tools and generators used in the construction phase will not likely cause interference to other equipment. Any tall cranes used are likely to have similar effects to those identified during operation.

9.162. The turbine and substation control electronics will be typical of circuits used by industry. Likely sources of electromagnetic emissions ‘will have low strength and will be located at such a distance from potential receptors ... the likely effect will be imperceptible’. Examination of mast coordinates show the proposed turbine locations should not interfere or block the existing Vodafone links. RTE indicated there may be a risk of some interference to Saorview television reception. Should interference occur to Saorview it will be addressed.

9.163. Mitigation Measures and Residual Effects – While significant effects have not been identified to television reception, the applicant intends to agree a protocol with RTE to see that any effects are minimised and/or remediated. The turbines are not expected to cause any significant telecommunications interference.

9.164. Cumulative Effects – The potential for cumulative effects is predicted to be not significant.

9.165. Summary of Significant Effects – No significant residual effects are anticipated following the implementation of mitigation measures.

9.166. Statement of Significance – The potential effects on EMI are considered to be not significant.

Assessment and Conclusion

9.167. I have considered the submissions on file, this chapter of the EIAR, and all supplementary documentation. I am satisfied that the potential for shadow flicker and EMI impacts can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. The mitigation measure proposed to address any potential shadow flicker in excess of 30 hours per year or 30 minutes per day is a standard condition which should be attached should permission be granted. I am satisfied that

the proposed development would not have any unacceptable direct, indirect, or cumulative shadow flicker or EMI impacts.

Chapter 11 – Landscape and Visual

9.168. Chapter 11 of the EIAR as submitted with the further information response to the planning authority has been used for this section. An 'Environmental Report Landscape and Visual Assessment Figures' document i.e. photomontages, was submitted with the original planning application. It was prepared by Jennings O'Donovan (undated).

9.169. Introduction – Landscape impact assessment (LIA) relates to assessing effects on the landscape as a resource in its own right whereas visual impact assessment (VIA) relates to assessing effects on specific views and on the general visual amenity experienced by people. Visual impact may occur from visual obstruction (blocking a view) or visual intrusion (interrupting a view without blocking; wind turbines would generally be in this category given their bulk).

9.170. Assessment Methodology and Significance Criteria – A desktop study and field work was carried out. A 20km radius defines the extent of the study area. Photomontages and wireframes were produced to provide indicative views of the proposed development from viewshed reference points (VRPs). Zone of theoretical visibility (ZTV) maps are based on bare-ground topography and present a worst-case scenario. They take no account of potential visual obstructions such as forestry, buildings, vegetation, or weather.

9.171. When assessing potential impacts, landscape character, value, sensitivity, magnitude of likely impacts, and significance of landscape effects, are considered. Definitions of terminology are provided for landscape value and sensitivity and landscape impact scale/magnitude, and a landscape impact significance matrix is outlined in table 11.3.

9.172. As with landscape impact, visual impact is assessed as a function of receptor sensitivity versus magnitude. Visual sensitivity has an anthropogenic basis. Visual receptors most susceptible to change include residents at home, people whose attention is likely focused on the landscape and particular views, or visitors to heritage assets. Those less susceptible include people engaged in sport or working whose attention is not focused or dependant on views of the landscape or the setting. To

assess the amenity value of views a range of criteria is considered e.g. recognised scenic views, intensity of use, degree of perceived naturalness, historical or cultural value, integrity of the landscape character etc. The magnitude of visual effects is determined on the visual presence of the proposal and its effect on visual amenity. A high order visual presence can be moderated by a low level of effect on visual amenity and vice versa. Visual impact magnitude assessment criteria are set out in table 11.4, and a landscape/visual effect significance graph is set out in table 11.5. Cumulative impact assessment criteria are set out in table 11.6.

9.173. Baseline Description – A landscape baseline description of the study area is provided, with photographs, and includes reference to settlements, transport routes and public amenities and heritage features.

9.174. The proposed development is considered in the context of the draft Wind Energy Guidelines and the 2015-2021 County Development Plan (as varied and extended). The proposed site is located in the Boleybrack Uplands Character Area, one of 14 no. areas in the Landscape Character Assessment, and this is described. The study area encompasses counties Leitrim, Cavan, Sligo, and Roscommon. The designated scenic views within the four counties are set out. The site is located in an Area of Outstanding Natural Beauty (A6 O'Donnell's Rock and Boleybrack). Wind energy has not been precluded in this area. Three scenic views/routes (V10, V15, and V19) are considered relevant. The closest relevant view/route in the other counties is Scenic Route No. 13, approx. 13km away in Co. Sligo.

9.175. Only those parts of the study area potentially affording views are of interest. The first part of the visual baseline is to establish a ZTV. The ZTV map is shown on figure 11.10. Two-thirds of the study area has no theoretical visibility. Section 11.3.6.8 sets out how the VRPs were selected, including those used for the existing wind farm. 14 no. VRPs were selected.

9.176. It is stated that there are 15 no. operational wind farms and one permitted (Tullynamoyle) within the study area. The Tullynamoyle wind farm is the largest in terms of the number of turbines.

9.177. Assessment of Potential Effects – In a do-nothing scenario the commercial forestry cycle is likely to dominate the central study area land use in tandem with the existing and permitted wind energy infrastructure.

- 9.178. Landscape character, value, and sensitivity is considered as is the magnitude of the landscape impact. The central (<5km) and wider (5km-20km) study areas are both considered to be of a medium-low landscape sensitivity. The magnitude of the landscape impact is considered to be medium-low in the central study area reducing at increasing distances beyond this threshold. For the central study area the significance of the landscape impact is judged to be moderate-slight, reducing to slight and imperceptible at increasing distances thereafter.
- 9.179. Photomontages have been submitted to illustrate the impacts from the 14 no. VRPs. A tabular analysis of the assessment of visual receptor sensitivity at each VRP is set out in table 11.9. Each VRP is individually described and considered. The significance of visual impacts ranges from imperceptible (VRPs 11 and 13) to moderate-slight (VRPs 3, 4, 7, 8, 9, and 14). Significant impacts are not considered to occur to residential amenity.
- 9.180. Cumulatively, 57.3% of the study area will not theoretically experience visibility of either the existing, permitted, or proposed turbines. Existing turbines have a lower height than the permitted and proposed turbines. 'While this ... does not help the visual cohesiveness of all 23 turbines, it is partially off-set by the fact that the larger, proposed and consented turbines are located on lower elevations ... thereby are less likely to be discerned from several locations as being notably larger, in the skyline context'. Beyond 4km-5km any height difference becomes less noticeable. Most receptors will read the overall development as a single wind farm. Four additional turbines/23 no. turbines overall are not considered to be excessive or inappropriate in the landscape context.
- 9.181. A ZTV (figure 11.12) has been produced for all existing and consented turbines. 78.07% of the study area will experience theoretical visibility of multiple wind farms. In the majority of receptors visibility of the proposed development and other wind farms are not in a single viewing arc. The main cluster of wind farms are more than 7km to the south/south west. '(I)t is considered that the Proposed Development will not contribute to cumulative impacts from wind farms within the study area to more than a Low degree ...'

- 9.182. Mitigation Measures and Residual Effects – There is very little that can be done to mitigate the operational stage view of the turbines. Some general measures are the choice of blade arrangement, tower design and colour, sunlight reflection, and rotation.
- 9.183. Summary of Significant Effects – No potentially significant landscape and visual effects, or cumulative effects, have been identified.
- 9.184. Statement of Significance – The proposed development has been assessed as having the potential to have negative long-term effects in the range of moderate-slight to imperceptible. Potential cumulative effects were considered to be of a low magnitude. These are not considered to be significant.
- 9.185. Assessment and Conclusion – The visual impact of the proposed turbines was a significant issue in terms of the observations received, and it is a significant issue in the consideration of any planning application for wind turbines. I consider that the quality and quantity of photomontages submitted adequately illustrate the visual impact of the proposed development in the local and wider areas.
- 9.186. The locations of the existing, permitted, and proposed turbines are illustrated on the Overall Site Layout Plan map (Drawing No. P-100-0) submitted with the original planning application. I agree with the applicant that the proposed turbines would likely be considered as an extension of the existing and permitted wind farm. T22, in particular, would consolidate the layout of the existing and permitted turbines. T16, T17, and T23 would extend rather than consolidate the overall wind farm footprint but T23, the furthest proposed turbine from the existing wind farm, would be closer to the existing wind farm than permitted T20 and T21.
- 9.187. There is a strong policy framework at all levels supporting wind energy development. Though it is not yet adopted, I note the content of the Draft Leitrim County Development Plan 2023-2029. Appendix VI (County Leitrim Landscape Character Assessment) states, under LCA 8 (Boleybrack), that one of the forces for change includes ‘Areas of search for wind turbines have been identified within this LCA according to the Draft Leitrim Renewable Energy Strategy indicating potential for future development in the form of additional wind farms and single wind turbines’. Appendix IX – Part A Draft County Leitrim Renewable Energy Strategy, states in table 6, ‘There are four upland areas identified in Figure 6.3 where existing wind farms sit within ‘available areas’. Extensions of these may prove viable ...’ Tullynamoyle is one

of these. While I acknowledge that this is only a draft plan and that any planning application would be assessed on its own merits, it nonetheless indicates general support for development of the type proposed.

9.188. The proposed turbines would be visible across a wide area. By the very nature of the development, wind farms will be visible in the landscape. There is little or nothing that can be done to mitigate their impact once constructed. However, there is already a 15 no. turbine wind farm present, with another four turbines permitted. Therefore, any landscape or visual impact presented by the proposed development must be considered in the context of the existing and permitted wind farm. Having regard to this I concur with the assessment of potential effects of the EIAR.

9.189. I acknowledge that the proposed turbines are larger than the existing turbines. Table 2.1 of the EIAR sets out the hub heights, blade diameters, and elevations of all 23 no. existing, permitted, and proposed turbines. This has been addressed in the LVIA. T1 – T15 have hub heights of 64 metres and blade diameters of 71 metres, permitted turbines T18 – T21 have hub heights of 92 metres and blade diameters of 115 metres, and the proposed turbines also have hub heights of 92 metres with a slightly longer blade diameter of 126 metres. Therefore the scale of the proposed turbines is not substantially larger, relatively, than those permitted. The proposed turbines are generally on higher ground than the permitted turbines but 11 no. of the 15 no. existing turbines are on higher ground than the highest proposed turbine, T16. The proposed turbines reflect the scale of modern turbines currently being applied for in planning applications. I do not consider it appropriate that turbines should necessarily be restricted to reflect the scale of existing turbines, in particular where ground levels vary so much (ground levels of existing and permitted turbines range from 106 metres to 401 metres and the proposed turbine levels range from 228 metres to 325 metres). I accept the applicant's position in terms of turbine heights as set out in pages 11-57 and 11-58 of the EIAR.

9.190. Cumulatively, I consider that the four proposed turbines would not be a concern. It would be an extension to an existing wind farm where the planning policy framework is generally supportive of this type of development. Other wind farms are relatively significant distances away and would generally not be visible from the same viewpoints.

9.191. The proposed underground cable does not present any landscape or visual impact concern. There is one section where there will be an overground cable linking T22 to the permitted substation to cross a watercourse but I consider this would be of minor visual impact in an agricultural, non-public area.

9.192. I have considered the submissions on file, this chapter of the EIAR, and all supplementary information. I am satisfied that the potential for landscape and visual impact is not significant, and I am satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative landscape or visual impacts.

Chapter 12 – Material Assets

9.193. The objective of this chapter is to determine the potential impacts of the proposed development on the material assets of the area i.e. agriculture, natural resources of economic value, road network, ESB network, telecommunications, air navigation, and forestry. Chapter 12 of the EIAR as submitted with the further information response to the planning authority has been used for this section. For clarity I will generally use the specific material asset being addressed as the heading.

9.194. Assessment Methodology and Significance Criteria – Various guidance documents are referenced and terminology/definitions of criteria for rating site attributes, impact assessment criteria, criteria for rating impact significance, and rating of significance of environmental impacts is provided.

9.195. Agricultural Practices – The site has several characteristics that affect its suitability for agriculture e.g. elevation, gradient, soils, and weather pattern. The total land take is approx. 2.94 hectares. New/upgraded access tracks will improve access for agricultural practises. The impact can be classed as slight, direct, small, adverse, long-term, and part reversible. Mitigation measures are inherent in the design. ‘No significant impacts are predicted on agricultural practices’.

9.196. Natural Resources of Economic Value – As the proposed development is relatively non-invasive no negative effect can be predicted for the site and survey area. Some positive impact can be predicted in terms of potential increased business for quarries and fuel suppliers which will ‘likely’ be supplied locally. Concrete blocks and reinforced steel will likely be sourced regionally/nationally. Turbines will be reconditioned or

recycled on decommissioning. The design has minimised land-take as much as possible. 'No significant impacts are predicted on the natural resources'.

9.197. Road Network – The haul route will follow the same road network as the existing wind farm. Substantial road widening and strengthening has been carried out on the local road network to facilitate the transport of turbine components. The peak number of deliveries per day will occur during turbine base construction when approx. 70 no. concrete truck deliveries will be required for each base. Approx. 47 no. loads of various turbine and crane parts would be delivered over a period of four to five months after civil works are complete. The relevant approvals and permits will be obtained for abnormal loads. Following construction approx. 40 no. loads would be required to remove all temporary on-site equipment and materials. As the same haul route will be used there is no requirement for any strengthening or widening. Prior to delivery of turbine components the relevant authorities will be consulted. There is not expected to be any road damage. A number of mitigation measures are outlined that 'should' be undertaken e.g. continuous monitoring of bridges and culverts, relevant permits, warning vehicles, wheel wash equipment etc. With mitigation, construction phase residual impacts 'will be minimised and will not be significant'. There will be no residual effect associated with the operational phase.

9.198. Telecommunications – No negative effect on transmission by Eir, 3, or RTE can be predicted and 'No impact is predicted in terms of telecommunications'. EMI is addressed in chapter 10.

9.199. Air Navigation – The proposed turbines will be 155 metres above ground level. The closest airport is Sligo approx. 30km to the north west. Obstacle lights were installed on T1, T5, T10 and T12 to comply with previous planning conditions. It is proposed to install obstacle lights on T16 (the highest proposed turbine). 'No significant impacts are predicted in terms of air navigation'. Given mitigation 'it is unlikely there will be any cumulative impacts associated with the EIA development on air navigation ...'

9.200. ESB Local Grid Network – Electricity generated from T16, T17, and T23 will connect via 20kV underground cable to the national grid at Corderry 110kV substation. T22 will connect via the permitted substation. The proposed route will follow public roads and is approx. 9.5km in length. All cabling will be underground except for one stream

crossing to connect T22 to the permitted substation. No additional infrastructure will be required.

9.201. Forestry – There are extensive areas of forestry surrounding the site but none within the site boundary. There will be no loss of forestry.

9.202. Summary of Significant Effects – No significant effects are likely given the mitigation measures.

9.203. Statement of Significance – ‘No potential significant cumulative effects are predicted’.

9.204. Assessment and Conclusion – I have considered the submissions on file, this chapter of the EIAR, and all supplementary documentation. I agree with the statement of significance in the EIAR Chapter that potential effects are likely to be, ‘in the worst case, moderate, adverse, short-term impact or lower (for road network impacts during construction) and the majority of other potential impacts were assessed to be short-term’. I note that no relevant prescribed body has made a submission regarding the height of the proposed turbines in the context of aviation, notwithstanding the presence of existing turbines in the immediate vicinity. I also note that the local road network was capable of accommodating turbine delivery for the existing wind farm, notwithstanding the increase in size/length of the proposed turbines. I am satisfied that the potential for impacts on material assets can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative impacts on material assets.

Chapter 13 – Archaeology and Cultural Heritage

9.205. This chapter assesses the impact of the proposed development on the known and potential cultural heritage resource e.g. archaeology, architectural heritage, history, place names etc. Chapter 13 of the EIAR as submitted with the further information response to the planning authority has been used for this section.

9.206. Assessment Methodology and Significance Criteria – The study area was 1km from turbines and 100 metres from the grid connection route. Relevant legislation and guidance are referred to. A desk top study was carried out. A field survey was carried out on 7th October 2020. Definitions of terminology used in relation to duration of effect,

quality of effect, type of effect, magnitude of impact, value/sensitivity assessment indicators of cultural heritage assets, and a significance of effects matrix are provided.

9.207. Baseline Description – The closest recorded archaeological site within the wind farm study area is LE016-003 (standing stone) approx. 500 metres to the east of T22. Five sites are identified 1km away or less from the proposed wind farm area. A summary of archaeology/architecture in the area from the early prehistoric period to the post-medieval period is set out. Nothing of archaeological significance was uncovered during archaeological monitoring for the existing wind farm development. The only protected structure in the wind farm study area is RPS No. 30901601 (iron works), and this also a recorded monument (LE016-008 (shown on plate 13.10 in appendix J)), approx. 1km south of T22.

9.208. Within the grid connection study area there are no designated architectural heritage structures. There is one archaeological site, LE105-176, a sweathouse 80 metres south of the cable route in Gortahork townland, though no feature is visible at ground level.

9.209. The local landscape within the environs of the proposed development ‘contains few cultural heritage sites and remains sparsely populated to the present day’. However ‘areas of upland heathland have the potential to contain previously unrecorded archaeological deposits, particularly of a prehistoric date beneath existing ground surfaces’. The proposed development site is considered to be of ‘low’ archaeological potential, though the potential to uncover previously unrecorded archaeological features cannot be discounted.

9.210. Assessment of Potential Impacts – No infrastructure works are proposed within the environs of known archaeological sites or within the curtilage of the iron works. The proposed development will not result in any predicted direct effects during the construction phase, though the possibility of encountering archaeology remains. There are no likely indirect impacts. There is no likely direct impact during the operational phase. In terms of indirect impact, portions of the turbines are likely to be visible from a number of recorded archaeological sites. Any decommissioning will result in no predicted negative impacts.

9.211. Mitigation Measures and Residual Impacts – Given the scale of the proposed development there is the possibility of encountering archaeology. A programme of

archaeological monitoring shall be undertaken during the construction phase. No mitigation is required for the grid connection within public roads as 'ground levels ... have been previously disturbed by road construction works'. No mitigation is considered necessary for the operation or decommissioning phases.

9.212. In terms of residual impact, should archaeological features be encountered, preservation in situ 'shall allow for a negligible/low magnitude of impact albeit on a hitherto unknown value/sensitivity asset ...', whereas preservation by record 'shall allow for a high magnitude of impact, albeit ameliorated by the creation of a full and detailed archaeological record ...'

9.213. Cumulative Impacts – No likely or significant cumulative impacts on the archaeological, architectural, or cultural heritage resource will arise.

9.214. Conclusions – The proposed development will have no predicted direct impact on the known cultural heritage resource.

9.215. Summary of Significant Effects – There is low potential to reveal sub-surface archaeological remains.

9.216. Statement of Significance – Given the absence of known cultural heritage assets the development location is considered to be of low archaeological potential but the potential to uncover archaeological features during construction remains. Archaeological monitoring of the construction phase will be undertaken.

9.217. Assessment and Conclusion – I have considered the submissions on file, this chapter of the EIAR, and all supplementary documentation. I consider that a standard archaeology condition should be attached should permission be granted for the proposed development, and I am satisfied that the potential for impacts on archaeology and cultural heritage can be avoided, managed and/or mitigated by measures that form part of the proposed scheme. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect, or cumulative impacts on archaeology and cultural heritage.

Chapter 14 – Interactions of the Foregoing

9.218. Chapter 14 of the EIAR as submitted with the further information response to the planning authority has been used for this section.

9.219. Introduction – Preceding chapters identify the potential significant environmental effects that may occur. For development with the potential for significant environmental effects there is also the potential for interaction. The result may exacerbate the magnitude of the effects, ameliorate them, or have a neutral effect. A matrix identifies key interactions and interrelationships.

9.220. Discussion of Interactions and Inter-Relationships Between Environmental Aspects – Table 14.2 sets out the interactions and descriptions of the interactions. It can be summarised as follows:

- Population and human health, and water (hydrology) – It is very unlikely that there will be an impact on water with regards to human health.
- Population and human health, and air and climate – There will be a positive impact during the operational phase. No potentially significant residual effects are identified.
- Population and human health, and noise – The assessment has identified no potentially significant residual effects.
- Population and human health, and shadow flicker – The assessment has identified no potentially significant residual effects.
- Population and human health, and EMI – The assessment has identified no potentially significant residual effects.
- Population and human health, landscape and visual, and archaeology and cultural heritage – The change in landscape from construction and operation of the turbines has the potential to impact on residents, tourists, and the public. Very little can be done to mitigate the operational stage in terms of visual impact. However, the potential effects on the landscape and visual setting are not significant. There is potential for destruction of previously unknown archaeology, or architectural or cultural heritage, during construction. This was considered in mitigation and monitoring measures. No potentially significant residual effects on population and human health or archaeology was identified.
- Population and human health, and material assets – These are considered not significant.

- Biodiversity, soils and geology, and water (hydrology) – There are direct links between these key environmental aspects e.g. disturbance to birds and mammals, alteration of the hydrological regime, and the risk of slippage from excavations. Risk pertains primarily to the construction and decommissioning phases. Provided all mitigation measures are fully implemented, the assessment has identified no potentially significant residual effects.
- Biodiversity and noise – Noise has the potential to impact on biodiversity. Suitable mitigation measures reduce impact. It is not envisaged that operational noise will impact on bird breeding. The assessment has identified no potentially significant residual effects.
- Water (hydrology), biodiversity, and geology and soils – Increased construction could lead to sedimentation of watercourses, impacting biodiversity. Mitigation has been embedded in the design and recommended for implementation. The assessment has identified no potentially significant residual effects.

9.221. Summary of Interactions and Inter-Relationships Between Environmental Aspects –

The EIAR has considered these interactions and inter-relationships throughout, through design to avoid impact where possible, and by mitigation measures. No significant negative impacts have been predicted.

9.222. Statement of Significance – It can be concluded that no significant negative effects are predicted.

9.223. Assessment and Conclusion – I accept the provisions of this EIAR chapter in relation to the interactions of the various environmental factors. These factors do not stand alone, but I consider that there is no significant negative impact likely to occur from their interactions, should appropriate mitigation measures be incorporated into the construction, operation, and decommissioning stages.

Reasoned Conclusion

9.224. I consider that the EIAR and supplementary information is sufficient to identify, describe, and assess the likely significant effects of the project on the environment. Having regard to the examination of environmental information contained above, as set out in the EIAR and supplementary information provided by the applicant, and the

submissions from the prescribed bodies and objectors/observers in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development are, and will be mitigated as follows where relevant:

- **Biodiversity** – There would be some habitat loss due to the construction of some access tracks, hardstanding areas, substation, and turbine foundations. Existing and permitted infrastructure is used where possible. Some biodiversity impact is inevitable and unavoidable with development of the type proposed. The EIAR demonstrates that no habitat to be lost within the development site is a qualifying interest of Boleybrack Mountain SAC. Measures have been designed to mitigate potential negative and harmful effects as a result of the proposed development, primarily during the construction phase, on the key ecological receptors identified as part of the impact assessment. Measures for the construction, operation and decommissioning phases are set out relating to general mitigation, water quality and aquatic fauna, non-volant mammals, birds, and bats.
- **Soils and Geology** – There is the potential for landslide at this location, though this is true of many upland wind energy developments. A robust response was received as part of the grounds of appeal to the planning authority's first reason for refusal on this issue. Mitigation measures are proposed related to, for example, earthworks, drainage management, and groundwater dewatering. The EIAR chapter concludes stating that peat slide risk analysis indicates a low to negligible risk of instability should all mitigation measures and recommendations be adhered to.
- **Hydrology and Hydrogeology** – Impacts on hydrology and hydrogeology could most likely occur during the construction phase. On-site data is in keeping with principals of peat hydrology in that there is a correlation between bog water level and distance from drainage features. A substantial number of mitigation measures are proposed to protect hydrology and hydrogeology, which also relate to other environmental factors such as biodiversity.
- **Air and Climate** – There would be a minor positive impact on the environment as a result of the increase in renewable energy resources.

- Landscape and Visual – The site is in an upland location and the proposed development would effectively read as an extension to the existing 15 no. turbine wind farm where there are also an additional four permitted turbines. While the proposed development would result in additional landscape and visual change in the area, I do not consider it to be significant at this location where turbines are already operational.

9.225. I am, therefore, satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment.

10.0 **Appropriate Assessment (AA)**

Appropriate Assessment (AA) Screening

Compliance with Article 6(3) of the Habitats Directive

10.1. The requirements of article 6(3), as related to screening the need for AA of a project under part XAB, section 177U of the Planning and Development Act, 2000 (as amended) are considered fully in this section.

Background on the Application

10.2. The AA Screening Report and NIS considered in this inspector's report are those submitted as appendix G to the grounds of appeal. The 'Screening Report for Appropriate Assessment' was prepared by Doherty Environmental Consultants Ltd. and is dated February 2022.

10.3. The function of the report 'is to identify the potential for the project to result in likely significant effects to European Sites and to provide information so that the competent authority can determine whether a Stage 2 Appropriate Assessment is required for the project'. The report outlines the screening methodology, a description of the proposed project, a site description including habitats, identifies Natura 2000 sites within the zone of influence (Zol), identifies likely significant effects, considers in-combination effects, and reaches a screening conclusion.

10.4. The conclusion is that 'it is the considered view of the authors of this Screening Report for Appropriate Assessment that the potential for likely significant effects to European

Sites cannot be ruled out at the Screening stage and that an Appropriate Assessment of the project is required'.

- 10.5. Having reviewed the documents and submissions, I am satisfied that the information allows for a complete examination and identification of any potential significant effects of the development alone, or in combination with other plans and projects, on European sites.

Screening for Appropriate Assessment – Test of Likely Significant Effects

- 10.6. The project is not directly connected with or necessary to the management of a European site and therefore it needs to be determined if the development is likely to have significant effects on a European site(s).
- 10.7. The proposed development is examined in relation to any possible interaction with European sites designated Special Areas of Conservation (SAC) and Special Protection Areas (SPA) to assess whether it may give rise to significant effects on any European site(s).

Brief Description of the Development

- 10.8. The applicant provides a description of the project on pages 5 and 6 of the screening report, since amended by, for example, page 2-14 of the EIAR as per the revised chapter 2 contained in the applicant's further information response to the Board. In summary the development comprises:

- four wind turbines with hub heights of 92 metres and rotor diameters of 126 metres, giving an overall height to blade tip of 155 metres.
- four reinforced concrete bases and crane hardstanding areas.
- one 20kV substation, two container units and associated electrical plant.
- underground (approx. 4km) and overground (approx. 100 metres) ducting connecting the turbines to the proposed and consented substations.
- 2,497 metres of access tracks (927 metres new and 1,570 metres of existing, upgraded access track,
- 20kV underground electrical cable approx. 9.5km in length connecting the proposed substation to Corderry 110kV substation along the public road network.

- installation of a drainage system for hardstanding and road areas.

10.9. The development site is described on pages 21 to 26 of the screening report. It is within and adjacent to Boleybrack Mountain SAC. Sheep grazing and small scale peat harvesting are land uses. Dominant habitats are wet grassland, acidic grassland, modified blanket bog, and artificial surfaces. Table 2.3 of the screening report outlines the habitats occurring under the footprint of the proposed development and includes the proposed turbine locations, existing and proposed tracks, and the grid connection route to the 110kV Corderry substation.

Submissions and Observations

10.10. AA-related issues comprised a significant part of the submissions and observations received. The second reason for refusal relates to impact on Boleybrack Mountain SAC.

10.11. The second planning authority planning report states in relation to AA, that 'The Planning Authority would place considerable reliance on the submission received by the DAU in this conclusion ...' This refers to the report from the Dept. of Housing, Local Government and Heritage received by the planning authority on 14th January 2022 and which is summarised in section 3.3.5 of this inspector's report. It was received on foot of the further information response. No departmental report was received on the original planning application, or in response to the grounds of appeal.

10.12. Issues related to AA were referenced in third party observations, both to the planning authority, and in the grounds of appeal. These related more to general impact on the SAC rather than any particular specific issue.

European Sites

10.13. The development site is located in and immediately adjacent to a European site, Boleybrack Mountain SAC (site code 002032).

10.14. European sites within the Zol of the proposed development must be evaluated on a case by case basis. Tables 5.1 and 5.2 of the applicant's screening report outline 12 no. European sites 'located within the wider region in which the proposed development is located'. The seven SACs and five SPAs are shown on figures 5.1 and 5.2 of the screening report in the context of the proposed site location. I agree with the applicant's consideration of these European sites at the initial stage. I have also

included Lough Arrow SAC in the following list given it is also an SPA and it is slightly closer to the proposed site boundary than Corratirrim SAC. These 13 no. European sites, and their location relative to the closest part of the proposed site boundary for SACs, and the closest turbine for SPAs, are as follows:

- Boleybrack Mountain SAC (site code 002032) – Immediately adjacent and partially within.
- Lough Gill SAC (site code 001976) – approx. 3.4km north west of the underground cable route to Corderry 110kV substation.
- Cuilcagh – Anierin Uplands SAC (site code 000584) – approx. 11km to the south east of the underground cable linking T22 to the permitted substation.
- Arroo Mountain SAC (site code 001403) – approx. 12km north of T23.
- Unshin River SAC (site code 001898) – approx. 14.5km south west of the underground cable route at Corderry 110kV substation.
- Lough Melvin SAC (site code 000428) – approx. 14.5km north of T23.
- Lough Arrow SAC (site code 001673) – approx. 15.5km south west of the underground cable route at Corderry 110kV substation.
- Corratirrim SAC (site code 000979) – approx. 16.5km east of T16.
- Sligo/Leitrim Uplands SPA (site code 004187) – approx. 16.1km north west of T23.
- Lough Arrow SPA (site code 004050) – approx. 20km south west of T22.
- Cummeen Strand SPA (site code 004035) – approx. 21.5km north west of T23.
- Ballysadare Bay SPA (site code 004129) – approx. 22.8km west of T23
- Drumcliffe Bay SPA (site code 004013) – approx. 24.5km north west of T23.

10.15. The applicant has considered whether there is a source-pathway-receptor link between the proposed development site and these European sites. This is set out in table 5.3 (SACs) and table 5.4 (SPAs). It is considered that there is a link between the proposed development and the qualifying habitats for two SACs i.e. Boleybrack Mountain SAC and Lough Gill SAC by way of proximity and hydrological pathways.

10.16. The other SACs are not considered to have any connection with the proposed development because there is no hydrological link between the proposed development site and the respective SAC. There are also significant separation distances. None of the SPAs are considered to be within the ZOI because of distances, no SCI species for which a relevant SPA has been designated have been recorded during extensive bird surveys at the project site, no suitable nesting habitat occurs, and existing site habitat is unsuitable.

10.17. I agree with the applicant that the only two European sites within the ZOI of the proposed development are Boleybrack Mountain SAC and Lough Gill SAC.

Table 1: Summary Table of European Sites Within the Zone of Influence of the Proposed Development

European Site	List of QIs	Distance from proposed development	Connections (source-pathway-receptor link)
Boleybrack Mountain SAC	Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with erica tetralix [4010] European dry heaths [4030] Molinia meadows on calcareous, peaty or clayey-silt-laden soils [6410] Blanket bogs (*if active bog) [7130]	Immediately adjacent and partially within	Proximity
Lough Gill SAC	White-clawed crayfish [1092] Sea lamprey [1095] Brook lamprey [1096] River lamprey [1099]	Approx. 3.4km north west of the underground cable route to	Hydrology

	<p>Salmon [1106]</p> <p>Otter [1355]</p> <p>Natural eutrophic lakes with magnopotamion or hydrocharition-type vegetation [3150]</p> <p>Semi-natural dry grasslands and scrubland facies on calcareous substrates [6210]</p> <p>Old sessile oak woods with ilex and blechnum in the British Isles [91A0]</p> <p>Alluvial forests with alnus glutinosa and Fraxinus excelsior [91E0]</p>	<p>Corderry 110kV substation</p>	
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10.18. In terms of in-combination effects the applicant's screening report notes that in the event of discharge of pollutants the project would have the potential to combine with other projects or land use e.g. fertiliser, to result in negative impacts to Lough Gill SAC. Further examination of the potential to combine 'is required as part of a NIS for the project'. I agree that discharge of pollutants could result in in-combination effects.

Mitigation Measures

10.19. No measures designed or intended to avoid or reduce any harmful effects of the project on a European site have been relied upon in this screening exercise.

Screening Determination

Significant effects cannot be excluded, and Appropriate Assessment required

10.20. The proposed development was considered in light of the requirements of section 177U of the Planning & Development Act, 2000 (as amended). Having carried out screening for AA of the project, I conclude that the project individually (or in combination with other plans or projects) could have a significant effect on European

sites Boleybrack Mountain SAC (002032) and Lough Gill SAC (001976) in view of the sites' conservation objectives, and AA (and submission of a NIS) is therefore required.

Appropriate Assessment (AA)

10.21. The requirements of article 6(3) as related to AA of a project under Part XAB, section 177V of the Planning & Development Act, 2000 (as amended) are considered fully in this section.

10.22. The proposed development is not directly connected to or necessary for the management of any European site and therefore is subject to the provisions of article 6(3).

The Natura Impact Statement (NIS)

10.23. The NIS submitted as appendix G with the grounds of appeal is considered for the purpose of AA. It is titled 'Natura Impact Statement', was prepared by Doherty Environmental Consultants Ltd., and is dated February 2022. According to its introduction, the report 'provides an examination, analysis and evaluation of the likely impacts from the Project, both individually and in combination with other plans and projects, in view of best scientific knowledge and the conservation objectives of the European Sites concerned. It also prescribes appropriate mitigation to ensure that the Project will not adversely affect the integrity of those sites identified as being at risk of likely significant effects. Finally, it provides complete, precise and definitive findings, which are capable of removing all reasonable scientific doubt as to the absence of adverse effects on the integrity of the European sites concerned'.

10.24. The submitted NIS is a very detailed document. It includes, inter alia, a baseline site description, a description of the proposed development, detail of the elements of the proposed development that have the potential to result in significant effects, conservation objectives, mitigation measures, and a conclusion.

10.25. The NIS concludes that 'the project will not, alone or in-combination with other plans or projects, result in significant adverse effects to the integrity and conservation status of European Sites in view of their Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion'.

10.26. The Department of Housing, Local Government and Heritage submitted a report on foot of the response to the planning authority's further information request outlining its concerns, and this informed the planning authority's Planning Report, particularly the second reason for refusal. The department's concerns are summarised in section 3.3.5 of this inspector's report. As noted in section 10.12 of this inspector's report, issues related to AA were also referenced in third party observations, both to the planning authority, and in the grounds of appeal, but these raised general concerns rather than specific issues. Revised and updated EIAR chapters have been submitted with the grounds of appeal, as well as an updated AA screening report and NIS.

10.27. Having reviewed the documents and submissions etc., I am satisfied that the information allows for a complete assessment of any adverse effects of the development on the conservation objectives of the following European sites alone, or in combination with other plans and projects:

- Boleybrack Mountain SAC (site code 002032)
- Lough Gill SAC (site code 001976).

Appropriate Assessment of Implications of the Proposed Development

10.28. The following is a summary of the objective scientific assessment of the implications of the project on the QI qualifying interest features of the European sites using the best scientific knowledge in the field. All aspects of the project which could result in significant effects are assessed and mitigation measures designed to avoid or reduce any adverse effects are considered and assessed.

European Sites

10.29. Boleybrack Mountain SAC and Lough Gill SAC are the only European sites subject to AA. The conservation objectives of the two European sites are as follows:

- Boleybrack Mountain SAC – Conservation objectives are set out in the 'Conservation Objectives Series Boleybrack Mountain SAC 002032' document published by the NPWS. They are to maintain the favourable conservation condition of the lakes and ponds [3160], and Molinia meadows [6410], and restore the favourable conservation conditions of the wet heaths [4010], dry heaths [4030], and blanket bogs [7130].

- Lough Gill SAC – Conservation objectives are set out in the ‘Conservation Objectives Series Lough Gill SAC 001976’ document published by the NPWS. They are to restore the favourable conservation of all QIs with the exception of white-clawed crayfish and otter, which have an objective to maintain the favourable conservation condition.

10.30. Boleybrack Mountain has five QI habitats and Lough Gill SAC has ten QI habitats and species. Table 5.3 of the applicant’s AA screening report considered that certain QIs could be excluded from further consideration as the proposed development could not affect them, with the remaining QIs possibly being affected. The QIs excluded in the applicant’s screening report are:

Boleybrack Mountain SAC

- Natural dystrophic lakes and ponds [3160] – There are a number of potential such features within the SAC but they are outside and upstream of the sub-catchments in which the project is located.
- Dry heaths [4030] – Field surveys have not identified this habitat in the wider vicinity, and it is not connected to the proposed development by a pathway.
- Molinia meadows [6410] – Field surveys have not identified this habitat in the wider vicinity, and it is not connected to the proposed development by a pathway.

Lough Gill SAC

- Semi-natural dry grasslands [6210] – These are terrestrial habitats, located a remote distance from the site, with no pathway between both.
- Old sessile oak woods [91A0] – These are terrestrial habitats, located a remote distance from the site, with no pathway between both.

10.31. Having regard to the conservation objectives series documents published by NPWS, and the detail submitted as part of the overall planning application, I agree with the applicant that these five habitats can be excluded from further consideration as part of this AA.

10.32. The attributes and targets of each QI habitat and species that it is considered could be affected by the proposed development, for both relevant SACs, are outlined in table

5.1 of the applicant's NIS along with the applicant's assessment of same. The attributes and targets are also set out in the respective 'Conservation Objectives Series' documents published by the NPWS. The applicant states that no detailed site specific conservation objectives have been published for otter, the lamprey species, or white-clawed crayfish for Lough Gill SAC, and, in lieu, the site specific conservation objectives of Lower River Shannon SAC and Lough Corrib SAC have been used to inform the assessment. In this regard, I note that version 1 of the 'Conservation Objectives Series Lough Gill SAC 001976' document as per the NPWS website is dated 15th December 2021. It appears that it may not have been available when the NIS was initially being prepared, and was not used to update the NIS when submitting the grounds of appeal.

10.33. Notwithstanding this non-use of the most updated and relevant documentation, I consider that the site-specific conservation objectives used, while not as per the current conservation objectives document, are nonetheless robust and adequate. For example, the attributes and targets for otters between Lough Gill SAC and Lower River Shannon SAC are consistent (minus the 'extent of marine habitat' which does not apply to Lough Gill SAC). In addition, there are similarities between both SACs relating to lamprey species attributes such as distribution, population structure of juveniles/larvae, juvenile/larval density in fine sediment, and extent and distribution of spawning habitat, and the most stringent lamprey targets e.g. in relation to distribution, access to watercourses down to first order streams and, in relation to population structure, at least three age/size groups. In addition, there are similarities between the white-clawed crayfish attributes and targets in the Lough Gill SAC conservation objectives document and the Lough Corrib SAC document used in the applicant's NIS such as those relating to distribution, negative indicator species, disease, and heterogeneity of habitat quality.

10.34. Therefore, while I acknowledge that the NIS is deficient in not using the most up-to-date information available, having regard to the foregoing, I consider that it is not fatal to the planning application. It relates to a downstream European site and, should it be concluded that there would be no likelihood of impact to this site, I do not consider that the use of attributes and targets from other similar European sites should negate the fact that there would be no likelihood of impact to the site i.e. Lough Gill SAC. I do not

consider permission should be refused on this basis alone, and I have had regard to this deficiency in my assessment.

10.35. There are two particular aspects of the proposed development which may appear to have an impact on the conservation objectives of Boleybrack Mountain SAC QIs, and therefore appear as potential adverse impacts to the conservation objectives of the SAC in table 2, below. However, these have been ruled out in the applicant's NIS. These two issues are summarised as follows:

10.36. Proposed vehicular access track through the SAC – A new vehicular access track is proposed from the existing wind farm close to T13 to south east of T17 where it would connect to an existing track. The proposed construction compound is located adjacent to T6, and the proposed track would be used for construction and operational purposes. Approx. 378 metres of access road is within the SAC boundary. Approx. 303 metres is existing track to be upgraded and approx. 75 metres is to be newly constructed. The habitat over which the proposed length of track will be constructed, and the general area, is acidic/wet grassland mosaic habitat. It is not habitat that is a QI of the SAC. The nearest example of such habitat is stated as being approx. 270 metres away. 'Given the nature of the habitats occurring at this location, the distance to the nearest area of peatland Annex I habitat and the historic drainage of this area, there will be no potential for the installation of this track to result in alterations to the hydrological regime of peatland habitats in the wider surrounding area', according to page 53 of the applicant's NIS.

10.37. This area is classified as article 17 national distribution mapping for blanket bog (figure 5.41 in the EIAR); however it is not representative of blanket bog habitat.

10.38. Changes to qualifying peatland habitat as a result of changes to the hydrological regime and water drawdown – The NIS devotes a significant number of pages to this issue (pages 49-58). It is noted that drainage of peatland habitats reduces the water stored in peat. Various studies are cited relating to the effects on water level in peatlands as a result of drainage ditches and gullies. In areas of already drained blanket bog the impact of additional drainage will be reduced. Blanket bog habitat around T16 and T23 'is representative of modified blanket bog where the effects of past drainage have already undermined the hydrological regime'. Past drainage is associated with turbary activity.

- 10.39. Modified blanket bog occurs in and close to T16 and T23 and south west of T17. The area immediately south east of T17, including its associated hardstanding, is also classified as blanket bog for article 17 mapping (figure 5.41) though it is not representative of this habitat. The existing access road forms an effective break between peatland substrates. This eliminates ‘the potential for these elements of the wind farm infrastructure to result in water draw from area [sic] on the opposite side of the track to the east and south’.
- 10.40. Piezometers were installed at and around T16 including three within the SAC. Analysis indicates that bog water levels are lower immediately adjacent to drainage channels but recover to high water tables within close proximity. Results of water level monitoring suggest the blanket bog habitat east of T16 is representative of modified blanket bog conditions. Baseline conditions in the vicinity of T16 indicative of existing drainage ‘is likely to limit the potential for indirect impacts to blanket bog habitat as a result of changes to the hydrological regime and water drawdown’. The presence of both a drainage feature north of T16 (which runs east to west) and the existing access track to the east (founded on bedrock) ‘will eliminate the potential for the proposed wind farm extension to result in changes to the hydrological regime of peatland habitats within the SAC to the northeast and east’ (page 55).
- 10.41. T23 and its associated infrastructure is located in an area of degraded blanket bog where extensive drainage has occurred. Given this, the proposed T23 infrastructure ‘will not have the potential to result in significant indirect impacts to surrounding blanket bog habitats as a result of changes to the hydrological regime or water drawdown’ (page 56). The SAC boundary is approx. 90 metres to the north, separated by an area of wet/marshy grassland and the Skeanada stream, which drains water from habitats north (in the SAC) and south of it. As a result of the degraded and drained conditions at and around T23, wet/marshy grassland between it and the SAC, and the presence of the Skeanada, there will be no potential for T23 and its infrastructure ‘to result in changes to the hydrological regime of the blanket bog habitats of the SAC to the north’. In addition, attenuation features and PHMP measures will aim to achieve a net increase in surface water levels in the peat habitats, which also applies around T16.
- 10.42. Modified blanket bog habitat occurs either side of the existing track to T23. The track has drains to either side and it is proposed to be upgraded. There will be no works within the modified blanket bog habitat. There will be no potential for this infrastructure

to result in drawdown. Blocking existing drainage features in the degraded habitat will potentially increase water levels.

10.43. Another area of modified blanket bog is south west of T17 and adjacent to the disused quarry. This area is within the SAC. The adjacent track will continue to be used and will not impact the modified blanket bog by way of changes to its hydrological regime.

10.44. Having regard to the foregoing, I accept the applicant's position that the proposed access track through the SAC to connect the existing wind farm with the proposed extension, would not have any impact on any QI feature of the SAC, as demonstrated by the habitat maps. The proposed track would comprise a tiny fraction of the overall 4,240 hectares SAC. The proposed track would be a short additional piece of infrastructure that would result in a vehicular access network that would facilitate the construction and operation of both the existing wind farm and proposed turbines 16, 17, and 23.

10.45. The applicant has also outlined the reasons why the proposed development would not have any adverse impact on the hydrological regime of blanket bog/SAC habitat. The blanket bog habitat at and surrounding T16 and T23 and their infrastructure is modified or degraded blanket bog. Figure 5.10 illustrates the extent of the network of artificial drainage that has resulted in the modification and degradation. Some proposed remediation measures such as blocking existing drains may increase water levels in these modified or degraded habitats. I am satisfied that the applicant has demonstrated that the proposed development would not affect the hydrological regime or water drawdown of blanket bog/SAC habitat.

10.46. Therefore, I am satisfied that these two issues can be omitted from further consideration as aspects of the proposed development that could have a potential adverse effect on the conservation objectives of the QI habitats of Boleybrack Mountain SAC.

Aspects of the Proposed Development that could affect Conservation Objectives

10.47. There is potential for impacts on QIs of the SAC as a result of:

- Ground disturbance resulting in instability to blanket bog and wet heath of the Boleybrack Mountain SAC and subsequent degradation of these habitats in the

event of a peat slide. (Chapter 6 of the EIAR assessment in section 9 of this inspector's report is also relevant to this issue).

- The release of pollutants such as suspended solids, contaminating substances, and increased sedimentation to surface watercourses draining the proposed development site and their conveyance downstream to Lough Gill SAC.
- The release of wastewater or chemical substances associated with temporary sanitation facilities during the construction phase.
- Disturbance to annex II species during construction of watercourse crossings.
- Potential for the spread of non-native invasive species.

10.48. I consider that these are the issues that could affect the QI habitats and species. These are generally construction phase impacts as none are expected to occur during the operational phase, bar the wider possibility of landslide. I note from the applicant's NIS that grid connection works have also been incorporated into the elements of the project with the potential to give rise to significant effects, such as cable trenching along the public road. Some decommissioning stage detail is provided on pages 48 and 49.

10.49. Tables 2 and 3 below summarises the AA and site integrity test for the relevant SACs. The tables are based on the NIS and NPWS data etc. The relevant conservation objectives for the European sites have been examined and assessed with regard to the identified potential significant effects and all aspects of the project, both alone and in-combination with other plans and projects. Mitigation measures proposed to avoid and reduce impacts to a non-significant level have been assessed, and clear, precise, and definitive conclusions reached in terms of adverse effects on the integrity of the European sites.

Tables 2 and 3: Summary of Appropriate Assessment of implications of the proposed development on the integrity of the European sites alone and in-combination with other plans and projects in view of the sites' conservation objectives.

Table 2 – Boleybrack Mountain SAC (site code 002032)					
Summary of key issues that could give rise to adverse effects:					
<ul style="list-style-type: none"> • Peat landslide • Non-native species 					
Conservation objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002032.pdf					
Summary of Appropriate Assessment					
Qualifying interest (QI) feature	Conservation objectives	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]	To restore the favourable conservation condition of Northern Atlantic wet heaths with <i>Erica tetralix</i>	Landslide – A peat landslide at this location could affect this QI habitat.	<p>Though the risk of such an event occurring is unlikely, even in the absence of mitigatory safeguards, construction phase mitigation will nevertheless be implemented e.g.</p> <ul style="list-style-type: none"> - no excessive spoil to be loaded onto sensitive peat covered sloping ground and any stored on ground of a peat sensitive nature will be on areas with a gradient of no more than 5°. Where not sensitive it can go to 10°. - the sides of all excavations will be battered back to approx. 45°. 	<p>The NIS considers there is no anticipated likely significant in-combination effects to European sites from interaction of the proposed development with the existing and permitted Tullynamoyle wind farm.</p> <p>I note that mitigation measures are in place to ensure these in-combination effects do not</p>	Yes. The NIS concludes that 'the project will not, alone or in-combination with other plans or projects, result in significant adverse effects to the integrity and conservation status of European Sites in view of their

		<p>Non-native species – Inadequate cleaning and inspection of plant could result in the spread of invasive species.</p>	<ul style="list-style-type: none"> - turbine base excavations should not cut into deep peat >2.5 metres. - all slopes to be regularly checked for tension cracks. - method statements will be followed at all times. - excavations are to be backfilled as soon as practicable. - appointment of competent and experienced contractors. - excessively wet periods should be avoided in terms of significant excavations in peat substrates. <p>Though no specific mitigation measures appear to be cited in the applicant's NIS, the introduction of clean, washed plant and machinery to site would address this issue.</p>	<p>arise, and I agree with this consideration of in-combination effects.</p>	<p>Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion'.</p> <p>I agree with this conclusion.</p>
Blanket bogs (*if active bog) [7130]	To restore the favourable conservation condition of Blanket bogs	As above	As above	As above	As above

For the remaining three habitats please see paragraph 10.32 of this inspector's report.	N/A	N/A	N/A	N/A	N/A
<p>Overall Conclusion: Integrity Test</p> <p>Following the implementation of mitigation, I am able to ascertain with confidence that the construction and operation of the proposed development would not adversely affect the integrity of Boleybrack Mountain SAC in light of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects</p>					

<p>Table 3 – Lough Gill SAC (site code 001976)</p>
<p>Summary of key issues that could give rise to adverse effects:</p> <ul style="list-style-type: none"> • Peat landslide • Pollutants to surface water • Wastewater • Disturbance to species • Non-native species <p>Conservation objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001976.pdf</p>
<p>Summary of Appropriate Assessment</p>

Qualifying interest (QI) feature	Conservation objectives	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
White-clawed crayfish [1092]	To maintain the favourable conservation condition of white-clawed crayfish	<p>Landslide – A peat landslide at this location could affect aquatic fauna and habitats downstream.</p> <p>Pollutants – Hydrocarbons, other</p>	<p>Though the risk of such an event occurring is unlikely, even in the absence of mitigatory safeguards, construction phase mitigation will nevertheless be implemented e.g.</p> <ul style="list-style-type: none"> - no excessive spoil to be loaded onto sensitive peat covered sloping ground and any stored on ground of a peat sensitive nature will be on areas with a gradient of no more than 5°. Where not sensitive it can go to 10°. - the sides of all excavations will be battered back to approx. 45°. - turbine base excavations should not cut into deep peat >2.5 metres. - all slopes to be regularly checked for tension cracks. - method statements will be followed at all times. - excavations are to be backfilled as soon as practicable. - appointment of competent and experienced contractors. - excessively wet periods should be avoided in terms of significant excavations in peat substrates. 	<p>The NIS considers there is no anticipated likely significant in-combination effects to European sites from interaction of the proposed development with the existing and permitted Tullynamoyle wind farm.</p> <p>Should the project result in surface water pollution or a landslide there would be potential to combine with existing agricultural land use which puts pressure on surface water quality and could also result in further</p>	<p>Yes. The NIS concludes that ‘the project will not, alone or in-combination with other plans or projects, result in significant adverse effects to the integrity and conservation status of European Sites in view of their Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion’.</p>

		<p>potentially contaminating solutions, or increased sedimentation, could discharge to surface water during construction resulting in a decrease in surface water quality and potentially affect aquatic fauna and protected habitat downstream.</p> <p>Wastewater – Untreated wastewater generated at the site compound during construction could discharge to surface water resulting in a decrease in surface water quality and</p>	<ul style="list-style-type: none"> - A detailed description of drainage management measures are provided in the SWMP. - retention of a water quality specialist responsible for implementation of the Water Quality Management Plan and the Water Inspection and Monitoring Plan both of which form part of the CEMP. - construction phase mitigation includes watercourse buffer zones, silt fencing, drainage management, provision of attenuation ponds, buffered outfalls, cement-based pollutants, refuelling and storage of contaminants, site clearance works mitigation. - an excavation and spoil management construction method statement is provided. - surface water monitoring stations will be deployed. - a drainage system will be in place for the operational phase including the use of settlement ponds. - portaloos will be used for the construction phase. 	<p>sedimentation to Belhavel Lough / Lough Gill SAC.</p> <p>Notwithstanding, I note that mitigation measures are in place to ensure these in-combination effects do not arise, and I agree with this consideration of in-combination effects.</p>	<p>I agree with this conclusion.</p>
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		<p>potentially affect aquatic fauna and protected habitat downstream.</p> <p>Disturbance to species – Perturbation of water quality during construction of watercourse crossings could disturb instream habitats and annex II species.</p> <p>Non-native species – Inadequate cleaning and inspection of plant could result in the spread of invasive species.</p>	<p>- adherence to Inland Fisheries Ireland guidelines.</p> <p>Though no specific mitigation measures appear to be cited in the applicant's NIS, the introduction of clean, washed plant and machinery to site would address this issue</p>		
Sea lamprey [1095]	To restore the favourable conservation condition of sea lamprey	As above	As above	As above	As above
Brook lamprey [1096]	To restore the favourable conservation condition of brook lamprey	As above	As above	As above	As above

River lamprey [1099]	To restore the favourable conservation condition of river lamprey	As above	As above	As above	As above
Salmon [1106]	To restore the favourable conservation condition of Atlantic salmon	As above	As above	As above	As above
Otter [1355]	To maintain the favourable conservation condition of otter	As above	As above	As above	As above
Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150]	To restore the favourable conservation condition of Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	As per white-clawed crayfish for landslide, pollutants, and wastewater	As per white-clawed crayfish for landslide, pollutants, and wastewater	As above	As above
Alluvial forests with Alnus glutinosa and	To restore the favourable conservation condition of Alluvial forests	As above	As above	As above	As above

Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)				
For the remaining two habitats please see paragraph 10.32 of this inspector's report.	N/A	N/A	N/A	N/A	N/A
<p>Overall Conclusion: Integrity Test</p> <p>Following the implementation of mitigation, I am able to ascertain with confidence that the construction and operation of the proposed development would not adversely affect the integrity of Lough Gill SAC in light of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.</p>					

10.50. Full and detailed mitigation measures are set out from in section 7 of the applicant's NIS from pages 107-138. The measures outlined in tables 2 and 3 above are very brief summations of some of the measures proposed and are not exhaustive lists of the measures contained within the NIS. A number of various plans are referenced within the NIS including a CEMP, SWMP, and a Spoil Management Plan. Individuals to be appointed are specified such as a water quality specialist (to implement the Water Quality Management Plan and the Water Inspection and Monitoring Plan), an environmental manager, and an ECoW.

10.51. I consider that the proposed mitigation measures related to the proposed wind farm extension project are relatively standard, well-proven good practice measures for construction works in peatland areas and would maintain the integrity of the two European sites that could be affected. I consider that the proposed measures are suitably detailed to remove any lack of clarity regarding potential adverse effects and that they are capable of being successfully implemented.

In-Combination Effects

10.52. The main development of note is the existing adjacent Tullynamoyle wind farm of which the proposed turbines are an extension to. There is a current permission for four additional turbines which are not yet constructed. Wind turbines can have an effect on birds, however there is no SPA in the wider vicinity of the site. No other development of scale has been identified in the NIS in proximity to the site and I am not aware of any development that would have any significant in-combination effect. The Leitrim Co. Co. website online planning application map does not show any significant development in the vicinity. I agree with the NIS finding that no adverse in-combination impacts are foreseen with any other plan or project.

Appropriate Assessment (AA) Conclusion

10.53. The proposed wind farm extension development has been considered in light of the assessment requirements of sections 177U and 177V of the Planning & Development Act, 2000 (as amended).

10.54. Having carried out screening for AA of the project, it was concluded that it may have a significant effect on Boleybrack Mountain SAC (site code 002032) and on Lough Gill SAC (site code 001976). Consequently, AA was required of the implications of the

project on the qualifying features of those sites in light of their conservation objectives. The possibility for significant effects was excluded for other European sites.

10.55. Following AA, it has been ascertained that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of Boleybrack Mountain SAC or Lough Gill SAC, or any other European site, in view of the site's conservation objectives.

10.56. This conclusion is based on a complete assessment of all aspects of the proposed project and there is no reasonable doubt as to the absence of adverse effects.

11.0 Recommendation

11.1. I recommend that planning permission should be granted subject to conditions, for the reasons and considerations as set out below.

12.0 Reasons and Considerations

In coming to its decision the Board had regard to the following:

- (a) The nature, scale, and extent of the proposed development,
- (b) The provisions of the Project Ireland 2040 National Planning Framework,
- (c) The provisions of the Climate Action Plan 2023 – Changing Ireland for the Better,
- (d) The provisions of the Wind Energy Development Guidelines for Planning Authorities (2006),
- (e) The policies of the Northern & Western Regional Assembly Regional Spatial & Economic Strategy (RSES) 2020-2032,
- (f) The provisions of the Leitrim County Development Plan 2015-2021 (as varied and extended),
- (g) The documentation submitted with the planning application, including further information responses to both Leitrim Co. Co and the Board, such as the

environmental impact assessment report (EIAR) and Natura impact statement (NIS),

- (h) The submissions received on file including from the planning authority, prescribed bodies, and third parties,
- (i) 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 on European sites,
- (j) The pattern of development in the area, including the existing Tullynamoyle wind farm and permitted extension to same, and the separation distance to houses, and,
- (k) The report of the inspector.

Appropriate Assessment: Stage 1

The Board agreed with and adopted the screening assessment and conclusions carried out in the inspector's report that the only European sites in respect of which the proposed development has the potential to have a significant effect are Boleybrack Mountain SAC (site code 002032) and Lough Gill SAC (site code 001976).

Appropriate Assessment: Stage 2

The Board considered the Natura impact statement (NIS) as submitted with the grounds of appeal, and other associated documentation, the mitigation measures contained therein, the submissions and observations on file, and the inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development on the two European sites in view of the sites' conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

- (a) the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,
- (b) the mitigation measures which are included as part of the current proposal, and,
- (c) the conservation objectives for the European sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the inspector's report in respect of the potential effects of the proposed development on the aforementioned European sites, having regard to the sites' conservation objectives.

In overall conclusion, the Board was 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.

Environmental Impact Assessment

The Board completed an environmental impact assessment of the proposed development taking account of:

- (a) the nature, scale, location, and extent of the proposed development,
- (b) the Environmental Impact Assessment Report and associated documentation submitted in support of the application,
- (c) the submissions received from the applicant, planning authority, prescribed bodies, and observers/submitters in the course of the application, and,
- (d) the inspector's report.

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed renewable energy development, and identifies and describes adequately the direct, indirect, secondary, and cumulative effects of the proposed development on the environment. The Board agreed with the examination, set out in the inspector's report, of the information contained in the Environmental Impact Assessment Report and associated documentation submitted by the applicant and submissions made in the course of the application.

Reasoned conclusion on the significant effects

The Board considered that the main significant direct and indirect effects of the proposed development on the environment are, and would be mitigated where relevant, as follows:

- Biodiversity – There would be some habitat loss due to the construction of some access tracks, hardstanding areas, substation, and turbine foundations. Existing and permitted infrastructure is used where possible. Some biodiversity impact is inevitable and unavoidable with development of the type proposed. The EIAR demonstrates that no habitat to be lost within the development site is a qualifying interest of Boleybrack Mountain SAC. Measures have been designed to mitigate potential negative and harmful effects as a result of the proposed development, primarily during the construction phase, on the key ecological receptors identified as part of the impact assessment. Measures for the construction, operation and decommissioning phases are set out relating to general mitigation, water quality and aquatic fauna, non-volant mammals, birds, and bats.
- Soils and Geology – There is the potential for landslide at this location, though this is true of many upland wind energy developments. A robust response was received as part of the grounds of appeal to the planning authority's first reason for refusal on this issue. Mitigation measures are proposed related to, for example, earthworks, drainage management, and groundwater dewatering. The EIAR chapter concludes stating that peat slide risk analysis indicates a low to negligible risk of instability should all mitigation measures and recommendations be adhered to.
- Hydrology and Hydrogeology – Impacts on hydrology and hydrogeology could most likely occur during the construction phase. On-site data is in keeping with principals of peat hydrology in that there is a correlation between bog water level and distance from drainage features. A substantial number of mitigation measures are proposed to protect hydrology and hydrogeology, which also relate to other environmental factors such as biodiversity.
- Air and Climate – There would be a minor positive impact on the environment as a result of the increase in renewable energy resources.
- Landscape and Visual – The site is in an upland location and the proposed development would effectively read as an extension to the existing 15 no. turbine wind farm where there are also an additional four permitted turbines. While the proposed development would result in additional landscape and

visual change in the area, I do not consider it to be significant at this location where turbines are already operational.

The Board completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures proposed as set out in the EIAR, and subject to compliance with the conditions set out below, the effects of the proposed development on the environment, by itself and in combination with other plans and projects in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions of the inspector.

Overall the Board is satisfied that the proposed development would not have any unacceptable effects on the environment.

Proper Planning and Sustainable Development

The Board considered that the proposed wind farm extension development would be in accordance with national, regional, and local planning policy, would make a positive contribution to Ireland's move to a low-carbon energy future, would be acceptable in terms of impact on the visual amenities and landscape character of the area, would not seriously injure the amenities of property in the vicinity, would not be prejudicial to public health, would not pose a risk to water quality or affect the natural heritage of the area, would not adversely impact the road network in the area and would, therefore, be in accordance with the proper planning and sustainable development of the area.

13.0 Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as amended by the further plans and particulars received by the planning authority on 19th November 2021 and 1st December 2021, and as received by An Bord Pleanála on the 5th September 2022, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the

development shall be carried out and completed in accordance with the agreed particulars.

Reason: In the interest of clarity.

2. This permission shall be for a period of 30 years from the date of commissioning of the wind farm extension.

Reason: To enable the planning authority to review its operation in the light of the circumstances then prevailing.

3. The period during which the proposed development hereby permitted may be constructed shall be ten years from the date of this Order.

Reason: In the interest of clarity.

4. The mitigation measures and monitoring commitments identified in the Environmental Impact Assessment Report, as amended through the course of the application, and other plans and particulars submitted with the application shall be implemented in full. Any measures or commitments stating 'should' or 'may' etc. shall be read as 'shall' etc. unless otherwise agreed in writing with the planning authority.

Reason: In the interests of clarity and the protection of the environment during the construction and operational phases of the proposed development.

5. The mitigation measures contained in the Natura impact statement, as received by the Board on 5th September 2022, shall be implemented in full. Any measures stating 'should' or 'may' etc. shall be read as 'shall' etc. unless otherwise agreed in writing with the planning authority.

Reason: In the interests of clarity, ensuring the protection of European sites, and the proper planning and sustainable development of the area.

6. (a) The turbines shall have hub heights of 92 metres, rotor diameters of 126 metres, and blade tip heights of 155 metres,
(b) The wind turbines including hubs and blades shall be externally finished in a light grey colour,
(c) Cables within the proposed development site shall be placed underground except as noted at the one water crossing to facilitate connection of proposed turbine T22 to the previously permitted substation,
(d) The wind turbines shall be geared to ensure that the blades rotate in the same direction,
(e) No advertising material shall be placed on or otherwise affixed to any structure on the site without a prior grant of permission.

Reason: In the interests of clarity and visual amenity.

7. Details of the materials, colours, and textures of all the external finishes of the proposed substation building and enclosing fence shall be submitted to and agreed in writing with the planning authority, prior to commencement of the development.

Reason: In the interest of the visual amenities of the area.

8. The developer shall appoint a suitably qualified ecologist to monitor and ensure that all avoidance/mitigation measures relating to the protection of flora and fauna are carried out in accordance with best ecological practice and to liaise with consultants, the site contractor, the National Parks and Wildlife Service, and Inland Fisheries Ireland, where necessary. A report on the implementation of these measures shall be submitted to the planning authority and retained on file as a matter of public record.

Reason: To protect the environmental and natural heritage of the area.

9. The developer shall retain the services of a suitably qualified bird specialist to undertake appropriate pre-construction and post-construction bird monitoring surveys of the site. Details of the surveys to be undertaken and associated

reporting requirements shall be developed following consultation with the National Parks and Wildlife Service and agreed in writing with the planning authority prior to commencement of development. The surveys shall be completed annually for a period of five years following commissioning of the wind farm extension and copies of the report shall be submitted annually to the planning authority and to the National Parks and Wildlife Service.

Reason: To ensure the appropriate monitoring of the impact of the proposed development on the avifauna in the area.

10. The developer shall review usage by birds of the wind farm extension site and document bird casualties through an annual monitoring programme, which shall be submitted by the developer to, and agreed in writing with, the planning authority prior commencement of development, or as otherwise agreed. This programme shall be developed in consultation with the Department of Housing, Local Government and Heritage, and shall cover the entire period of the operation of the wind farm extension.

Reason: To ensure appropriate monitoring of the impact of the development on the avifauna of the area.

11. The operation of the proposed development, by itself or in combination with any other permitted wind energy development, shall not result in noise levels, when measured externally at nearby noise sensitive locations, which exceed:

(a) Between the hours of 07.00 and 23.00:

(i) the greater of 5 dB(A) $L_{90,10min}$ above background noise levels, or 45 dB(A) $L_{90,10min}$, at standardised 10 metres height above ground level wind speeds of 7 metres per second or greater,

(ii) 40 dB(A) $L_{90,10min}$ at all other standardised 10 metres height above ground level wind speeds

(b) 43 dB(A) $L_{09,10min}$ at all other times.

Prior to commencement of development, or as otherwise agreed in writing with the planning authority, the developer shall submit to and agree in writing with the planning authority a noise compliance monitoring programme for the subject development, including any mitigation measures such as the de-rating of particular turbines. All noise measurements shall be carried out in accordance with ISO Recommendation R 1996 'Assessment of Noise with Respect to Community Response', as amended by ISO Recommendations R 1996-1. The results of the initial noise compliance monitoring shall be submitted to, and agreed in writing with, the planning authority within six months of commissioning of the wind farm.

Reason: In the interest of residential amenity.

12. In the event that the proposed development causes interference with telecommunications signals, effective measures shall be introduced to minimise interference with telecommunications signals in the area. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the planning authority prior to commissioning of the turbines and following consultation with the relevant authorities.

Reason: In the interests of protecting telecommunications signals and of residential amenity.

13. Details of aeronautical requirements shall be submitted to, and agreed in writing with, the planning authority prior to commencement of the development, or as otherwise agreed in writing with the planning authority. Prior to the commissioning of the turbines, the developer shall inform the planning authority and the Irish Aviation Authority of the as-constructed tip heights and coordinates of the turbines.

Reason: In the interest of air traffic safety.

14. (a) Cumulative shadow flicker arising from the proposed development shall not exceed 30 minutes in any day or 30 hours in any year at any existing or permitted house, or other sensitive receptor.
- (b) The proposed turbines shall be fitted with appropriate equipment and software to control shadow flicker at houses and sensitive receptors.
- (c) A report shall be prepared by a suitably qualified person, in accordance with the requirements of the planning authority, indicating compliance with the above shadow flicker requirements. Within 12 months of commissioning of the proposed wind farm extension this report shall be submitted to, and agreed in writing with, the planning authority. The developer shall outline proposed measures to address any recorded non-compliances, controlling turbine rotation if necessary. A similar report may be requested at reasonable intervals thereafter by the planning authority.

Reason: In the interest of residential amenity.

15. Prior to commencement of development a detailed Construction Management Plan for the construction stage shall be submitted to, and agreed in writing with, the planning authority, generally in accordance with the proposals set out in the Environmental Impact Assessment Report. The Construction Management Plan shall incorporate the following:

- (a) a detailed plan for the construction phase incorporating, inter alia, the construction programme, supervisory measures, noise management measures, construction hours, and the management of construction waste,
- (b) a comprehensive programme for the implementation of all monitoring commitments made in the application and supporting documentation during the construction period,
- (c) an emergency response plan, and,
- (d) proposals in relation to public information and communication.

A record of daily checks that the works are being undertaken in accordance with the Construction Management Plan shall be available for inspection by the planning authority.

Reason: In the interests of environmental protection and orderly development.

16. Details of the Construction and Environmental Management Plan (CEMP) shall be agreed in writing with the planning authority prior to the commencement of development. The CEMP shall include but not be limited to operational controls for dust, noise and vibration, waste management, protection of soils and groundwaters and surface waters, protection of flora and fauna, site housekeeping, emergency response planning, site environmental policy, and project roles and responsibilities.

Reason: In the interests of environmental protection and orderly development.

17. During the construction phase a complaints register shall be maintained to record any complaints regarding but not limited to noise, odour, dust, traffic, or any other environmental nuisance. The complaint register shall include details of the complaint and measures taken to address the complaint and prevent repetition of the complaint. This register shall be available for inspection by the planning authority.

Reason: In the interest of orderly development.

18. On full or partial decommissioning of the wind farm extension, or if the wind farm ceases operation for a period of more than one year, the turbines and all decommissioned structures shall be removed and foundations covered with soil to facilitate revegetation. These reinstatement works shall be completed to the written satisfaction of the planning authority within three months of decommissioning or cessation of operation.

Reason: To ensure satisfactory reinstatement of the site upon cessation of the project.

19. The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording, and protection of archaeological

materials or features which may exist within the site. In this regard, the developer shall:

- (a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, and,
- (b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.

The assessment shall address the following issues:

- (i) the nature and location of archaeological material on the site, and,
- (ii) the impact of the proposed development on such archaeological material.

A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.

20. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the reinstatement of public roads which may be damaged by the transport of materials to the site, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory reinstatement

of the public road(s). The form and amount of the security shall be as agreed between the relevant planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

Reason: To ensure the satisfactory reinstatement of the delivery route.

21. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site upon cessation of the project coupled with an agreement empowering the planning authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

Reason: To ensure satisfactory reinstatement of the site.

22. The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning & Development Act, 2000 (as amended). The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine the proper application of the terms of the Scheme.

Reason: It is a requirement of the Planning & Development Act, 2000 (as amended), that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.

Anthony Kelly

Planning Inspector

2nd February 2023