Inspector's Report
ABP-320354-24

Development	Permission for the construction of 7 wind turbines and all associated works. A 10 year planning permission and 35 year operational life of the wind farm from the date of commissioning is sought. Environmental Impact Assessment Report and Natura Impact Statement submitted with application.
Location	In the townlands of Ridge, Agharue, Coolnakisha and Seskinrea, Co. Carlow.
Planning Authority	Carlow County Council
Planning Authority Reg. Ref.	24/60122
Applicant(s)	EDF Renewables Ireland Ltd.
Type of Application	Permission.
Planning Authority Decision	Refusal.
Type of Appeal	First Party
Appellant(s)	EDF Renewables Ireland Ltd.
Observer(s)	Justin & Susan Hayden. Mary Farrell.

	Rural Residents Wind Aware & Environmental Group.
Date of Site Inspection	24th June 2025.
Inspector	Heidi Thorsdalen

Contents

1.0 Overview

1.1. Background

1.1.1. The planning application (reg. ref. 24/60122) which forms the basis of this appeal was lodged to Carlow County Council in May 2024 by EDF Renewables Energy Ireland Ltd (the applicant/appellant). The proposed development comprises the proposed Seskin Wind Farm, all development components located within Co. Carlow, including 7 wind turbines, a Battery Energy Storage System (BESS), a 38kV Substation, grid connection route (2km) and other associated works. A notification of the decision to refuse planning permission was issued by Carlow County Council by Order dated 5th July 2024 (see Section 4.1 below).

1.1.2. A separate concurrent planning application (reg. ref. 24/60210) was lodged to Kilkenny County Council by the same applicant, EDF Renewables Energy Ireland Ltd, in May 2024. This application comprised development components associated with the proposed Seskin Wind Farm, all located within Co. Kilkenny, including the 38kV underground grid connection to the existing 110kV Kilkenny substation (c. 18.1km) and turbine delivery route junction accommodation and bridge strengthening works. Kilkenny County Council requested further information in June 2024 and a response to further information by the applicant was received in January 2025. The planning application for the grid connection route and turbine delivery route accommodation works associated with the proposed Seskin Wind Farm was refused by Kilkenny County Council in March 2025. This decision was appealed by EDF Renewables Energy Ireland to the Commission (ABP-322225-25) and I am the reporting Inspector. A decision on this appeal is pending.

1.1.3. An Environmental Impact Assessment Report (EIAR) and an Appropriate Assessment Screening Report and Natura Impact Statement assessing the totality of the Proposed Project i.e. the proposed Seskin Wind Farm, BESS, 38kV substation, proposed grid connection route (combined route of c. 20.1km), turbine delivery route and all associated works as located within both Co. Carlow and Kilkenny, were submitted with both the aforementioned planning applications. For the avoidance of doubt, the response to further information submission associated with the concurrent

application to Kilkenny County Council (reg. ref. 24/60210), as noted above, has not been taken into account in my assessment as outlined in this report.

1.1.4. The remit of this appeal is the proposed development components located within Co. Carlow as per Section 1.1.1 above. For clarity and consistency with the submitted EIAR and the Natura Impact Statement (NIS), any reference in my report to the proposed development or the proposed Wind Farm site or site comprises the proposed Seskin Wind Farm and all development components as located within Co. Carlow. The Proposed Project refers to the totality of the development components as proposed within both counties. Reference to the proposed grid connection route (18.1km) and turbine delivery route refers to development components located within Co. Kilkenny.

1.2. Planning Application Documents

1.2.1. The planning application, in addition to letters, forms and application drawings, is noted to have been accompanied by the following documentation:

- Planning Report, Seskin Wind farm Co. Carlow & Co. Kilkenny (MKO).
- Environmental Impact Assessment Report Non-Technical Summary, Seskin Wind Farm (MKO).
- Environmental Impact Assessment Report, Seskin Wind Farm (MKO).
- Appropriate Assessment Screening Report and Natura Impact Statement, Seskin Wind Farm (MKO).

2.0 Site Location and Description

2.1. The appeal site is located in County Carlow, and within the townlands of Ridge, Agharue, Coolnakisha and Seskinrea. The stated site area in the planning application form is 70.37 hectares (ha) and comprises commercial forestry, agriculture land and public road.

2.2. The site is located in the northwest of County Carlow adjacent to the boundaries with Co. Kilkenny and Co. Laois. The proposed Wind Farm is located approximately 3.1km northwest of Oldleighlin in County Carlow and 9.9 km southeast of Castlecomer, Co. Kilkenny. The site is in an upland area whereby residential

development is sparse and is served by an existing local road network and existing forestry and agricultural roads and tracks. The elevations within the proposed Wind Farm site range from ~230mOD (metres above Ordnance Datum) in the west to ~271m in the northeast.

2.3. The appeal site is located adjacent to the River Barrow and River Nore Special Area of Conservation (SAC), specifically at Philip's Bridge (L1850/L30371) and the Black Bridge (L1837/L1835). The River Nore Special Protection Area (SPA) is located approximately 15.7km to the southwest.

3.0 Proposed Development

3.1. Overview

3.1.1. Permission for the construction of 7 wind turbines and all associated works. A 10 year planning permission and 35 year operational life of the wind farm from the date of commissioning is sought.

3.2. Turbines

3.2.1. 7 No. turbines with permanent turbine hardstands and foundations are proposed. A design flexibility opinion issued by Carlow County Council on 14th March 2024 accompanied the application, and the turbine parameter range for which flexibility sought is as listed below.

Turbine Parameter	Assessment Envelope
Turbine Blade Tip Height	179.5m to 180m
Rotor Diameter	149m to 155m
Hub Height	102.5m to 105m

3.2.2. The above turbine dimensions will result in an overall tip height range of between 179.5 to 180m and a lowest swept height ranging from 25m to 30.5m. The chosen turbine output is 6.6MW giving an estimated installed capacity of 46.2MW for the proposed 7 No. turbines development.

Location coordinates and elevation references for the proposed turbines are provided in EIAR Table 4.1, and I have included a copy of this below.

	ITM Coordinates		
Turbine	**X(ITM)**	**Y(ITM)**	**Top of Foundation Elevation (m OD)**
T1	663467	669637	252
T2	663996	669653	269
T3	664205	669229	260
T4	663569	669075	252
T5	664134	668661	254
T6	663450	668611	242
T7	663626	668143	252

3.2.3. **Turbine foundation, hardstanding and assembly area:** Each turbine will be placed on a concrete turbine foundation, installed below the finished ground level. The maximum horizontal and vertical extent of the turbine foundation will be 23.5m and 4m respectively. The turbine foundation may be formed using piling methods or on competent strata (i.e. bedrock or subsoil of sufficient load bearing capacity). Hardstanding areas are required around each turbine base and will consist of levelled and compacted hardcore. Levelled assembly areas will be located on either side of the hard-standing area. Details provided in EIAR Figure 4-7.

3.2.4. **Metrological Mast:** One freestanding met mast at 36.5m in height is proposed, located at X 663011, Y 668327. It will be constructed on a hardstanding area. Details provided in EIAR Figure 4-10.

3.3. Site Entrance, Roads and Watercourse Crossings

3.3.1. The main site entrance for construction and operation is via an existing agricultural site entrance off local road, L3037 which runs along the western boundary of the proposed Wind Farm site. This site entrance is proposed to be permanently upgraded, includes 13m junction radii and 1:10 tapers in accordance with TII Junction Design Guidelines (TII DN-GEO-03060), and temporary run-over area to accommodate abnormal loads (details in EIAR Figure 4-22a). Construction traffic will cross between the northern and southern part of the proposed Wind Farm site via an

existing access on the northern side of the L30372 and via a proposed access on the opposite side of the L30372. A cross road junction design is proposed (details in EIAR Figure 4-22b). No construction access via the L30372 is proposed. The operational access to the onsite substation will be via the new entrance on the southside of the L30372.

3.3.2. Approximately 2.8 km of existing onsite roads and tracks (predominately forestry tracks, 2.2km) are to be upgraded. Approximately 2.7km of new onsite access roads are to be constructed. Road construction details are provided in EIAR Appendix 4-2 and cross sections for new and upgrades provided in Figures 4-7 and 4-8 respectively.

3.3.3. Two watercourse crossings are proposed along internal access tracks. At Crossing 1, the existing 450mm culvert is to be replaced with a clear span bottomless culvert. The same clear span crossing methodology is also proposed at Crossing 2, a new watercourse crossing (details in EIAR Figure 4-31).

3.4. Onsite Substation, Battery Storage and Grid Connection

3.4.1. The proposed onsite 38kV substation compound measures approximately 2,350 m^2. The onsite substation will form a permanent part of the national electricity grid. The proposed control building, measures 17.5m by 7.3m and 6m in height. It includes both the Independent Power Provider (IPP), Control Building and the ESB Control Building and will contain welfare facilities. A wastewater holding tank will be located within the compound. The compound will include steel palisade fencing (c. 2.5m high) and internal fences to segregate different areas. Details in EIAR Figures 4-13a to 13-b and 4-14 to 4-16.

3.4.2. The BESS primarily consists of 4 no. steel containers mounted onto concrete plinth foundations. These containers and the adjacent infrastructure house the batteries, inverters, transformers, fire suppression equipment and associated electrical components. The BESS will be located within the substation compound and be operational 24 hours per day, 7 days a week. Details in EIAR Figures 4-13a and 4-14.

3.4.3. Onsite underground 20kV or 33kV electricity cabling and fibre-optic cables will follow the access roads and connect each turbine and to the onsite substation. Typical cable trench details in EIAR Figure 4-9.

3.4.4. The 38kV substation will be connected to the national grid via 38kV underground cabling, an approximately 20.1km grid connection route within the public road network linking to the 110kV Kilkenny Substation at Scart. Approximately 2km of the grid connection route is located within Co. Carlow, and follows the public road (L30371, L3037 and L30372) before entering the proposed onsite 38kV substation. The 2km route includes the provision of 2 no. joint bays, communication chambers and earth sheath links along the underground electrical cabling route. One watercourse crossing is proposed along L30372 (Bridge 7), and proposed method of crossing is Horizontal Directional Drilling (HDD). The launch area for HDD at the crossing of Bridge 6 (Phillip's Bridge) along the L30371 is located in Co. Carlow.

3.4.5. The remaining c. 18.1km of the proposed grid connection route from Phillip's Bridge, west of The Butts to the Kilkenny 110kV Substation at Scart is located within Co. Kilkenny and subject to a separate application/appeal (see Section 1.1.2 above).

3.4.6. The proposed grid connection route will be permanent, under the ownership and control of the ESB and EirGrid, and will form part of the national electricity grid.

3.5. Construction Compounds

3.5.1. Two temporary construction compounds are proposed, as follows:

- Primary construction compound (c. 4,320 m^2), located adjacent to Turbine No. 6 (details in EIAR Figure 4-11).
- Secondary construction compound (c. 2,600m^2), located adjacent to the onsite substation (details in Figure 4-12).

3.5.2. The areas of the temporary construction compounds will be reinstated with previously excavated peat and spoil, and either be reseeded or left to revegetate naturally.

3.5.3. A 18-24 month construction programme is anticipated

3.6. Peat and Spoil

3.6.1. Total excavation volume of peat is 22,338m^3 and spoil is 34,104m^3 (details provided in EIAR Table 4-2). It is noted that a contingency factor of 15% is included in the excavated spoil volumes, and a bulking factor of 20% for excavated peat volumes.

- 8 no. peat deposition areas, located adjacent to the hardstand and foundation of Turbines No 2, 3, 4, 5 and 7. A total capacity volume of 24,700m^3.
- 6 no. spoil deposition areas, located adjacent to the hardstand and foundation of Turbines No 1,2 4, 5, and 6, and adjacent to the onsite 38kV substation. A total capacity volume of 40,845m^3.

3.6.2. Location details in EIAR Figure 4-19, and cross sections in Figure 4-19b and 4-19c. Peat and spoil management plan included in Appendix 4-2.

3.7. Tree Felling

3.7.1. A total of 19 ha of forestry will be permanently felled within and around the proposed Wind Farm site. Felling areas are detailed in EIAR Figure 4-20. Felling will be subject to a Limited Felling Licence application to the Forest Service.

3.7.2. Replanting to occur on a ha by ha basis as per the requirements of Forest Service policy and will occur outside the identified cumulative study areas for the typical environmental effects of afforestation (EIAR, Section 2.9.2.3).

3.8. Transport Routes

3.8.1. The construction haul route for the supply of concrete and stone is anticipated to be from the east and south, such as Kilcarrig Quarries Ltd. located north of Leighlinbridge in Co. Carlow (details in EIAR Figure 4-23) and via the R448/L3037. General construction materials are anticipated to follow the turbine delivery route via the existing N78/L1834 junction to the site (approach from north) and the haul route north of Leighlinbridge (approach from south).

3.8.2. The anticipated abnormal load delivery route for the turbine components is from Waterford (Belview Port), via the N29, N25, N9, M9, N78 and L1834/L1835/L3037 to the proposed Wind Farm site entrance (details in EIAR Figure 4-24). Upgrade works

to the turbine delivery route include temporary accommodation works at the N78/L1834 junction and permanent strengthening works to the Black Bridge (L1835) (Protected Structure: Kilkenny RPS Ref. D84), are both forms part of the application to Co. Kilkenny (see Section 1.1.2 above). A component of the strengthening works at Black Bridge on the L3037 is shown to be located within Co. and forms part of this appeal.

3.9. Operation

3.9.1. The expected lifespan for the proposed Wind Farm is approximately 35 years. The proposed development would be monitored remotely with routine maintenance carried out.

3.10. Decommissioning

3.10.1. At the end of the operational lifespan, the above ground turbine infrastructure will be disassembled, separated and removed for suitable recycling/recovery facility. Underground cabling will be pulled and removed for recycling/recovering. Other underground infrastructure would remain in place and covered with earth and reseeded as appropriate. Access track will be left in situ. Grid infrastructure including onsite substation, BESS and grid connection route will be permanent. Decommissioning Plan included in EIAR Appendix 4-8.

4.0 Planning Authority Decision

4.1. Decision

4.1.1. A notification of the decision to **refuse** planning permission was issued by Carlow County Council by Order dated 5th July 2024 with 3 no. reasons for refusal, as follows:

1. The proposed wind farm development is located in the Killeshin Hills Landscape Character Area and Uplands Landscape Type, as designated in the Carlow County Development Plan 2022-2028 and accompanying County Landscape Character Assessment and Schedule of Protected Views. The Killeshin Hills Landscape Character Area has key characteristics including being open to views

from a wide area within the County, the distinct prominence of the Castlecomer Plateau as a backdrop to the area, a tapestry of small to medium scale fields, and designated protected scenic routes and views, and the Uplands Landscape Type is assigned the highest landscape sensitivity rating of 5. Policy WE. P4 in the Plan states that wind energy development is not normally permissible in the Uplands Landscape Type, and Policies LA. P1, LA. P2, LA. P3 and LA. P11 seek to protect and maintain the overall integrity of the County's landscape by recognising its capacity to sustainably integrate and absorb appropriate development, by ensuring development does not have a disproportionate landscape or visual impact in sensitive upland areas, by adopting a presumption against developments on elevated or visually exposed sites or areas, and by protecting the aesthetic attributes of views and prospects. It is considered that the proposed wind farm development, incorporating 7 no. wind turbines with a maximum blade tip height of 180 metres and maximum rotor diameter of 155 metres, by itself and in combination with adjoining permitted wind farm developments, would have disproportionate and adverse landscape and visual impacts on the Killeshin Hills Landscape Character Area and Uplands Land Character Type, would be out of scale with and result in overbearing impacts on the receiving landscape, would unduly detract from those characteristics which contribute to its landscape value, scenic quality and sensitivity, and would negatively impact on the established appearance and aesthetic attributes of protected scenic route numbers 4, 5, 6, 7, 8, and 9 and protected view numbers 27, 28, 31, 32, 33, and 34 as identified in the Carlow County Landscape Character Assessment. Accordingly, to permit the proposed development would be contrary to Policies WE. P4, LA. P1, LA. P2, LA. P3 and LA. P11 in the Carlow County Development Plan 2022-2028 and would therefore be contrary to the proper planning and sustainable development of the area.

2. The proposed wind farm development is located in an upland area which is predominately served by a local road network of restricted width and capacity. Having regard to the site location and the condition of the existing road network proposed to access the site during the construction period, it is considered that the submitted plans and particulars, including the Environmental Impact Assessment Report, have failed to satisfactorily demonstrate that the local road

network is of adequate capacity and design to accommodate the volume and frequency of HGV traffic along the proposed haul routes. Accordingly, to permit the proposed development would likely result in significant adverse impacts on the local road network, would endanger public safety by reason of a traffic hazard and obstruction of road users, and would therefore be contrary to the proper planning and sustainable development of the area.

3. From an assessment of background noise levels and predicted cumulative noise levels for night-time noise detailed in Chapter 12 of the Environmental Impact Assessment Report, it has not been demonstrated to the satisfaction of the Planning Authority, due to the submission of insufficient information, that the predicted increase in the cumulative noise environment for the operational phase of the proposed wind farm development would not give rise to adverse impacts on local residents. Therefore, to permit the proposed development in the absence of this information would be prejudicial to public health and the protection of the residential amenities of the area and would therefore be contrary to the proper planning and development of the area.

4.2. Planning Authority Reports

4.2.1. Planning Report

There is one Planner's report (includes Appendix 1 EIA and Appendix 2 Summary of 3rd Party Submissions/Observations) on file which informs the refusal decision, and which is summarised as follows:

- Appropriate Assessment: Referred to Environment Section (internal) and Blackstaff Ecology (external consultant appointed). AA carried out and completed effectively and all relevant factors have been considered. Concluded that the proposed development, individually or in-combination with other plans or projects, will not adversely affect the integrity of River Barrow and River Nore SAC and River Nore SPA.
- Archaeological and Architectural Heritage: Noted that Black Bridge (RPS Ref. D84), listed for protection within Kilkenny County Council Development Plan, is within the subject site boundary and within site boundary for the concurrent application with Kilkenny County Council.

- Public Consultation: Summary of pre and post submission consultation process provided, and the receipt of 93 no. of valid third party submissions. Considered that the EIAR appears excessive and concerned that the EPA's 2022 Guidelines have not been complied with. Noted that difficult for members of the public to access and comprehend and therefore to engage in an any meaningful way with the planning process as a result.
- Principle of the Proposed Development: Noted that the CDP sets out the County's capacity to provide renewable energy and in this regard, the proposed wind farm is largely considered acceptable subject to environmental and planning consideration. Noted that it is anticipated that the majority of renewable energy in the county will come from solar and only a limited proportion is anticipated from wind as per the Renewable Energy Strategy (Appendix VI), an acknowledgement of the significant landscape sensitivities which exists within the County.
- Landscape and Visual: Considered the proposed development contrary to WE P4, LA P1, LA P2, LA P3 and LA P11.
- Identified the site within the Killeshin Hills Landscape Character Area (LCA) as per Appendix VII (County Landscape Character Assessment), specifically within the 'Uplands' Landscape Type (LT) of the LCA and with the highest landscape sensitivity rating of 5.
- Noted that section 6.1.5.1 of the Renewable Energy Strategy (Appendix VI) identifies the Killeshin Hills LCA of moderate capacity for wind farm developments. Noted that Figure 6-4 and Policy WE P4 set out that wind farm development within the 'Uplands' LT is normally permissible.
- Considered the proposed turbines to be located on an elevated unbroken and exposed plateau that is highly visible to views from the central lowlands, and considered that the overall size and scale of the proposed turbines relative to the smaller landscape setting will result in significant disproportionate and overbearing visual impacts (reference to submitted Viewpoints 14 and 15).
- Considered that the main visual impacts of a shorter range will occur along L3037, L3037-2 and L7123 and Scenic Routes 6, 7, 8 and 9 and from Protected Views 31 and 32, considered significant and limited screening provided. In wider landscape, particular central lowlands to the east, cumulative impact with

adjoining permitted wind farms would be significant (reference to submitted Viewpoints 01, 04, 05, 06, 08, 09, 12, 14 and 15). The proposed development was also considered to result in very significant landscape visual impacts on Scenic Route 04 and Protected Views 27, 28, 33 and 34.

- Traffic/Roads: Noted the recommendation of refusal from Transportation Section of the Council. Capacity and design of the local road network not demonstrated satisfactorily. The proposed development was considered likely to have significant adverse impact on the local road network and would endanger public safety by reason of traffic hazard. Forms basis for Reason for Refusal No. 2.
- No road safety audit carried out.
- Concerns raised that cumulative construction impacts (Bilboa Wind Farm and White Hills Wind farms) on road network have not been given sufficient consideration. Unclear how scheduling of construction could effectively be agreed with other developers.
- Potential conflict between the proposed strengthening works to Black Bridge and the consented ones for White Hill Wind Farm not considered.
- Land, Soils and Geology: Noted no concerns expressed by the Environment Section of the council and from external consultant (Blackstaff Ecology). Planning authority considered that further ground investigation such as borehole for turbine foundations is required at consent stage and queried whether an alternative location should be looked at for T05 to avoid mitigation measures with regard to peat stability. Noted that Chapter 8 fails to assess cumulative impacts.
- Noise and Vibration: Not satisfied that there will not be a significant adverse impact on residential properties arising from noise. Concurred with HSE that further assessment is required on predicted increase in cumulative night-time noise environment.
- Shadow Flicker: Noted that the mitigation strategy commits to ensure there is no occurrence of shadow flicker at any property within 1.55km study area.
- Natural Heritage/Biodiversity: Noted that report by appointed external consultant report (Blackstaff Ecology), found that a full supported assessment was provided in Chapter 6 and minor clarification details could be addressed by further information.

- Conclusion:

- Capacity of the sensitive upland landscape to absorb such development was considered to have been met. The height and scale of the proposed turbines was considered to result in very significant and disproportionate landscape and visual impacts in the area.
- The proposed development was considered likely to have significant adverse impact on the local road network and endanger public safety by reason of traffic hazard.
- Further assessment and possible mitigation required to ensure noise levels do not have an adverse impact on local residents. traffic

Appendix 1, Environmental Impact Assessment, in summary:

- Satisfied that the EIAR has been prepared by competent experts.
- Satisfied that the EIAR adequately identifies and describes the direct and indirect effects of the proposed development.
- Satisfied that the information provided is reasonable and sufficient to allow the planning authority to reach a reasoned conclusion on the significant effects of the project on the environment.
- Satisfied that the information in the EIAR complies with the provisions of Article 3, 5 and Annex (IV) of the EU Directive 2011/92/EUA as amended.
- Generally satisfied with the Non-technical summary.
- Consultation: See summary of planner's report above.
- Alternatives (Chapter 3) Generally satisfactory case for the reasons behind the chosen option put forward by the applicant. The assessment has been presented as an iterative process in the preparation of the EIAR.
- Population and Human Health (Chapter 5): Designated scenic routes and viewpoints not given due consideration as a tourism asset. More detail required on the cumulative assessment on human health and population, in particular with regard to noise impacts (refer to HSE submission). The potential impacts on residential amenity as a result of the disproportionate and adverse landscape and visual impacts on the local rural area not given sufficient consideration.
- Biodiversity (Chapter 6): Based on the appointed external consultant's (Blackstaff Ecology) report, minor details to be clarified including experience of field survey team, field mapping application used, crepuscular newt surveys,

dedicated lizard surveys, and crepuscular bat survey of structures along proposed grid connection route.

- Birds (Chapter 7): Based on external consultant's (Blackstaff Ecology) report, clarifications sought including breeding bird survey scope, spread of survey times during the day, target species, I-WeBS sites, ZoI, presentation of red and amber listed passerines species.
- Land, Soils and Geology (Chapter 8): See summary of planner's report above.
- Water (Chapter 9): Content considered satisfactorily, and no further amendments required. Conclusion that there will be no change to WFD status of downstream water bodies is reasonable. Based on external consultant's (Blackstaff Ecology) report, found that the chapter deals effectively and comprehensively with specific threats to ecological receptors via hydrological linkages. No serious concerns raised by the Council's Environment Section or the HSE.
- Air Quality (Chapter 10) and Climate (Chapter 11): No concerns with content raised.
- Noise and Vibration (Chapter 12): See summary of planner's report above.
- Cultural Heritage (Chapter 13): Mitigation measures for proposed works to Black Bridge (RPS Ref. D84) noted and no concerns with content raised. Reference made to conditions recommended by DAU.
- Landscape and Visual (Chapter 14): Considered that the assigned Low landscape value and Low sensitivity assignments of the site are contrary to the provisions of the Development Plan; cumulative visual impacts on the plateau would be significant rather than moderate; the full magnitude of visual impacts not considered, no direct views of Turbines 3, 4 and 5 selected and concerns regarding the selection of viewpoints from the east; LVIA understates the potential cumulative impacts and the significance of effects across a number of viewpoints; and 150m rotor diameter applied and not the maximum agreed parameter of 155m. See further summary of planner's report above.
- Material Assets (Chapter 15):See summary of planner's report above.
- Major Accidents and Natural Disasters (Chapter 16) and Interactions (Chapter 17): No concerns with content raised.

- Reasoned conclusions: Main significant direct and indirect effects relate to landscape and visual impacts, likely result in significant traffic construction impacts and insufficient information to demonstrate that the proposed development would not as a result of predicted increase in cumulative noise environment give rise to adverse impacts on local residents.

4.3. Other Technical Reports – Carlow County Council

4.3.1. The following reports are appended to the Planner's report:

4.3.2. Environment Department, Senior Executive Engineer (31st May 2025) in summary:

- No objection subject to conditions relating to adherence to mitigation measures in the EIAR, NIS and CEMP; and construction in accordance with CEMP and compliance with construction best practice construction standards.
- Appropriate Assessment: The Environment Section has ascertained that the project, individually or in combination with other projects, will not adversely affect the integrity of any European Site.
- Environmental Impact Assessment Evaluation Checklist: Content of the EIAR considered adequate. Detailed consideration provided of WFD, Bat Surveys, Bird Monitoring, Noise, Geotechnical and Peat Stability, Flood Risk, Environment, Climate Change, Ecological and Biodiversity, and taking account of EIAR mitigation measures, no concerns raised.

4.3.3. **Fire Services, Fire Officer** (17th June 2024):

- No objection subject to condition relating to submission of a risk assessment of proposed BESS facility and suppression system.

4.3.4. **Planning Department, Executive Engineer** (Environment) (17th June 2024), in summary:

- No objection subject to conditions relating to CEMP, surface water CEMP, existing forestry drains and proposed drainage system, surface water run-off and suds, and crossing of streams.

4.3.5. **Transportation Department** (3rd July 2024), in summary:

- Proposed development considered likely to have a significant adverse impact on the local road network.
- Proposed development considered likely to have a significant adverse impact on the local road network, endanger public safety by reason of traffic hazard.
- EIAR considered to not satisfactorily demonstrate that the local road network is of adequate capacity and design to accommodate the volume and frequency of HGV traffic proposed during construction
- Concerns regarding impacts on local legacy roads, L30372-0, L3037-11 and L7123-0, L1837. Notes that these are "floating" roads on boggy type lands not designed or constructed to carry the loads proposed by the development. Anticipates that significant re-construction will be required and noted that there is insufficient information on post construction proposals.
- A full structural assessment required for Black Bridge, specifically the heritage of the bridge, load bearing capacity and the hydrological capacity.
- Noted a number of energy projects at planning/development stage (White Hill Wind Farm, Kilderry Solar Farm, Freneystown Wind Farm).

4.4. Prescribed Bodies

4.4.1. **Irish Aviation Authority (IAA)** (13th June 2024), in summary:

- Preliminary screening assessment to confirm the proposed development and any associated cranes that would be utilised during its construction would have no impact on enroute communications, navigation and surveillance equipment.
- Standard aviation conditions sought.

4.4.2. HSE Environmental Health Services (14th June 2024), in summary:

- Recommended further assessment of operational cumulative night time noise levels and to propose possible mitigation measures to ensure that noise levels do not have an adverse impact on local residents.
- Noted that the predicted increase in the cumulative noise environment above the background level indicates a significant change (more than 10dB(A)) in the night time noise environment at a number of sensitive receptors.
- Noted the applicant's conclusion of compliance with the 2006 Guidelines, but noted that the 2006 Guidelines permit significant increases in noise levels above

background noise particularly in quieter areas and that the alternative approach within Draft 2019 Guidelines is consistent with the World Health Organisation's Environmental Noise Guidelines for the European Union, 2018.

- Recommended conditioning shadow flicker mitigation measures as per Section 5.10.3.10 of the EIAR, and recommends co-operation between neighbouring wind farm operators to minimise cumulative effects of shadow flicker.
- Recommended that specific measures for the management of peat stability at T05 as outlined in the EIAR are conditioned.
- Considered mitigation measures outlined in Chapter 9 Water to result in a robust environmental management plan and that these are conditioned. There should be no direct or indirect emissions of waste water into ground or surface water during the construction phase.
- Recommended dust control measures detailed in Chapter 10 Air Quality are conditioned. Potholes or damage to road surfaces should be repaired within 24 hours to minimise dust and noise from vehicles.
- Recommended that the applicant notifies local receptors in advance of a carrying out any construction works likely to result in an exceedance of the levels outlined in BS 5228, construction hours to be conditioned and good practice given in BS 5228 to be followed.
- Recommended noise mitigation measures outlined in Section 12.7.2 of the EIAR is conditioned.
- Recommended ongoing community consultation during construction and operation should planning permission be granted. Recommended that a comprehensive complaints procedure is implemented.

4.4.3. Department of Housing Local Government and Heritage (DAU) (27th June 2024), in summary:

- Recommended conditions protecting archaeological heritage. Noted that recommended conditions align with sample conditions C.3, C.5 and C. 6 of the OPR Practice Note PN03.
- Noted that it is possible that previously unrecorded sub-surface archaeological features/materials may be disturbed during the course of groundworks.

- Broadly concurred with the findings of the assessment of potential impacts on archaeological heritage (EIAR Chapter 13).
- All mitigation measures in Chapter 13 shall be implemented in full, except as may otherwise be required in order to comply with the recommended conditions relating to archaeological heritage.

4.4.4. **Kilkenny County Council** (28th June 2024), in summary:

- Noted that the proximate landscape of Co. Kilkenny is classified as upland (Castlecomer Plateau) and not identified as being specifically 'visually pleasing' in the Kilkenny County Development Plan 2021-2027. Prior to the ministerial direction, the area was classified in the Wind Energy Strategy as 'Preferred' and 'Acceptable in Principle' for wind energy development.
- Noted that the proposed Wind Farm does not appear to be significantly visible from a highly scenic or specifically visually pleasing landscape (River Valley or Brandon Uplands) in Co. Kilkenny. There are no designated scenic viewpoints and no designated existing or proposed walking trails or public rights of way near the site in Co. Kilkenny.
- Very significant visual impacts in the context of host landscape noted from Viewpoints No. 3 (L30371, 2km west) and No. 9 (6.2km southwest) and Photowire J (L1836, c. 2.5km north). Noted that views from surrounding areas of Coan would be very limited.
- Noted that there are no archaeological landscape designation or priority protection on surrounding landscape in Co. Kilkenny. The bridge strengthening works to Black Bridge (RPS Ref. D84) is in Kilkenny and have been assessed as part of the grid connection application to reg. ref. P2460210.
- A significant separation distance to the nearest dwelling in Co. Kilkenny noted, c.1.75km west of the nearest turbine. Noted that noise, shadow flicker impacts are unlikely to be unduly significant.
- Not entirely clear from the traffic impact assessment how the proposed development would impact on the road network during the delivery and construction period, particularly the local road network. Impacts to road network in Co. Kilkenny resultant of grid connection have been assessed as part of grid connection application reg. ref. P2460210. Insufficient data regarding impacts on N78 raised by TII in response to reg. ref. P2460210.

- In-combination impacts on Co. Kilkenny from the proposed Wind Farm and White Hill Wind Farm (315365-22) and also other nearby medium to large scale renewable energy developments. Particular concerns relate to visual impacts, transportation impacts including N78/L1834 temporary junction arrangement and the use of local roads within Co. Kilkenny for both construction and delivery.
- Noted that details are required as regards to proposals for dealing with surface water and ground water from construction works including deliveries and operations.

4.5. Third Party Observations

4.5.1. Some 93 no. of observations were received by the planning authority from members of the public on the planning application. These are summarised in the Planner's report in section 4 and appendix 2. I note that the issues raised in these submissions are generally reflected in the issues raised in the third party observations to the appeal received by the Commission.

5.0 Planning History

5.1. Planning application site

5.1.1. The following planning site history of relevance to the proposed development and/or overlapping the subject site is noted:

- **322225-24 (24/60210)**: Planning permission refused in March 2025 for grid connection route and turbine delivery accommodation works to the proposed Seskin Wind Farm within County Kilkenny (see Section 1.1.2 above). I am the reporting Inspector and the decision is pending.
- **23/60220**: Permission granted in July 2024 for temporary met mast at Seskin Wind Farm site, County Carlow.
- **315365-22**: Planning permission granted in November 2023 for White Hill Wind Farm consisting of 7 no. wind turbines located in counties Kilkenny and Carlow. Associated works includes the construction of a temporary access track (150m in length) between the N78 national road and L1834 local road, and carriageway strengthening works at 'Black Bridge' on the L1835 and L3037.

5.2. Other renewable energy developments

5.2.1. Planning history for renewable energy developments within the surrounding area:

- **322078-25**: Permission granted for proposed 110kV Electricity Substation and approximately 8.8km of underground electricity line for White Hills Wind Farm (reference 315365-22) at Shankill and Ballygorteen in County Kilkenny and Lacken, Moanmore and Baunreagh in County Carlow.
- **318295-23 (22/340)**: Permission granted in November 2024 for Bilboa Wind Farm, land at Boolyvannanan and Coolnakisha, Bilboa, County Carlow. Permission previously granted under 11/154 (ABP 01.240245), as amended under reg. ref. 21/15 and subsequently expired. Grid connection granted under reg. refs. 20/180 & 20/281. Permission granted in August 2021 for 4.6 km of underground cables within Co Carlow (20/180). Permission granted in July 2021 for 2.0 km underground cables and a new substation within the County Laois (20/281).
- **243364 (14/36)**: Permission refused for 21 no. wind turbines each with a maximum tip height of 140m at Knocknabranagh and Knockbaun, Ridge, Baunreagh and Lacken, Carlow.
- **04/935**: Permission granted for 7 turbines up to 125 m tip height at Gortahile, Ardough, Co Laois. 1 turbine, up to 125 m tip height, extension permitted under reg. ref. **09/237**. Operational.

5.3. Other recent developments

5.3.1. Recent relevant planning history for recent developments in the immediate area:

- 22/61: Permission granted for dwelling at Seskin Upper, Old Leighlin
- 312370-22 (21/341): Permission granted for dwelling at Seskin Upper, Old Leighlin.
- 21/470: Permission granted for dwelling at The Ridge, Old Leighlin.
- 21/401: Permission granted for dwelling at Parknakyle, Old Leighlin.
- 21/377: Permission granted for dwelling at Agharue, Old Leighlin.
- 21/220: Permission granted for dwelling at the Ridge, Old Leighlin.

- 20/257: Retention permission granted for replacement dwelling at the Ridge, Old Leighlin.

6.0 Policy Context

6.1. European and National Policy, Legislation and Guidance

6.1.1. **RED III (European Renewable Energy Directive (EU/2023/2413))**: RED III raised the overall renewable energy target from 32% to at least 42.5% at EU level by 2030, but it is aiming for 45%. This means almost doubling the existing share of renewable energy in the EU. The revised Directive sets out measures to further streamline administrative permitting and granting procedures for renewable energy developments including connection to the grid. RED III was transposed into Irish legislation, S.I. 274 of 2025 (as amended).

6.1.2. **European Wind Power Action Plan**: The RED III renewable target of at least 42.5% by 2030 will require the installed capacity to grow from 204GW (2022) to more than 500 GW by 2030. The plan identifies six pillars of concerted action including acceleration of deployment through increased predictability and faster permitting, improved auction design, access to finance, creating a fair and competitive international environment, skills and industry engagement and Member State commitments.

6.1.3. **REPowerEU Plan 2022 and Directive EU 2018/2001 (as amended 18/05/2022)**: This plan was prepared in response to the Russian invasion of Ukraine and focuses on the need to end the EU's dependence on Russian fossil fuels and to tackle the climate crisis. The plan amends the Directive on the Promotion of the Use of Energy from Renewable Sources (Directive EU 2018/2001) to require that 45% of energy is from renewable sources and includes the accelerated rollout of renewable energy.

6.1.4. **European Green Deal 2020:** The aim of this policy is to make Europe climate neutral by 2050. In 2021, the European Climate Law made greenhouse gas emission targets a legal obligation. These targets were increased from 40% to 55% by 2030.

6.1.5. **Directive 2019/944 and Regulations EU 2019/941**: There is an obligation on each Member State to monitor the security of electricity supply within their territory over

the medium to long-term and each member state is entitled to set and monitor the level of security of supply deemed appropriate for its own needs.

6.1.6. **Climate Action Plan (CAP) 2024 and CAP 2025**: The purpose of the CAP is to lay out a roadmap to deliver on Irelands climate ambition, of 51% reduction in GHG emissions from 2021-2030 and net-zero emissions by 2050. The CAP aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022. CAP 2025 builds upon CAP 2024 by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings and it should be read in conjunction with CAP 2024. The Key Target for Onshore Wind is to achieve 6GW by 2025 and 9GW by 2030.

6.1.7. **Climate Action and Low Carbon Development Act, 2015, as amended**: The Act commits Ireland to the objective of becoming a carbon-neutral economy by 2050, reducing emissions by 51% by the end of the decade. Section 17 of the Climate Action and Low Carbon Development (Amendment) Act, 2021 amends the principal act such that Section 15(1) requires:

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

"Relevant body" means a prescribed body or a public body.

6.1.8. **Energy Security in Ireland to 2030, Energy Security Package (November 2023)**: Confirms that Irelands future energy will be secured by moving to an electricity-led system maximising our renewable energy potential.

6.1.9. **National Energy Security Framework (April 2022)**: Sets out the Governments response to the impacts of the war in Ukraine. It coordinates energy security work

across the electricity, gas and oil sectors. Under 7.2, the Framework notes that prioritising renewables is in line with the requirements of the recast Renewable Energy Directive and the EC REPowerEU action statement.

6.1.10. **Policy Statement on Security of Electricity Supply (November 2021)**: This Statement sets out that ensuring energy security is a national priority, as the electricity system decarbonises towards net zero emissions.

6.1.11. **Long-Term Strategy on Greenhouse Gas Emissions Reductions (April 2023)**: The Strategy sets out that the transition to a climate neutral future, the pathway to decarbonisation must be underpinned by affordability and security in how we access and use energy. In the short-term, capacity shortfalls in the electricity system needs to be addressed and ensure adequate conventional generation is in place to support the elevated levels of renewable electricity being generated.

6.1.12. **National Climate and Energy Plan 2021-2030 (NCEP)**: Ireland's target to reduce greenhouse gas emissions increased from 40% to 55% by 2030. It refers to reaching 70% of energy from renewables by 2030, underpinned by the Renewable Energy Support Scheme. Energy security is a key priority.

6.1.13. **National Planning Framework (NPF) First Revision** (April 2025):

- National Strategic Outcome 8 Transition to a Carbon Neutral and Climate Resilient Society: sets out that for Ireland to meet its climate targets, reduce its greenhouse gas emissions, and improve its energy security by reducing reliance on imported fossil fuels and diversifying its electricity supply, an accelerated delivery of additional renewable electricity generation is essential to deliver 80% of Ireland's electricity needs from renewable sources by 2030. The need to develop enabling infrastructure including reinforce the distribution and transmission network to facilitate planned growth is recognised. Along with geographical focused renewables investments to minimise the amount of additional grid investment required, for example through co-location of renewables and grid connections.
- National Policy Objective 70: Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a climate neutral economy by 2050.

- National Policy Objective 71: Support the development and upgrading of the national electricity grid infrastructure, including supporting the delivery of renewable electricity generating development.
- National Policy Objective 72: Support an all-island approach to the delivery of renewable electricity through interconnection of the transmission grid.
- National Policy Objective 73: Support the co-location of renewable technologies with other supporting technologies and complementary land uses, including agriculture, amenity, forestry and opportunities to enhance biodiversity and promote heritage assets, at appropriate locations which are determined based upon the best available scientific evidence in line with EU and national legislative frameworks.
- National Policy Objective 74: Each Regional Assembly must plan, through their Regional Spatial and Economic Strategy, for the delivery of the regional renewable electricity capacity allocations indicated for onshore wind and solar reflected in Table 9.1, and identify allocations for each of the local authorities, based on the best available scientific evidence and in accordance with legislative requirements, in order to meet the overall national target.
    - Table 9.1: Additional Renewable Power Capacity Allocations for the Southern Region is 978MW for onshore wind by 2030 and 3,302MW for solar. The total national share for the region in 2030 is 40% of onshore wind and 43% of solar.
- National Policy Objective 75: Local Authorities shall plan for the delivery of Target Power Capacity (MW) allocations consistent with the relevant Regional Spatial and Economic Strategy, through their City and County Development Plans.

6.1.14. **National Development Plan 2021-2030 (NDP)**: The NDP sets out investment priorities underpinning the implementation of the NPF and Chapter 13 deals with NSO 8 Transition to a Climate-Neutral and Climate Resilient Society. Public capital investment choices must contribute to a 51% reduction in greenhouse gas emissions by 2030 and lay the pathway to achieve net-zero greenhouse gas emissions by 2050. This will require grid-scale renewable electricity generation and storage,

supported by significant expansion and strengthening of the electricity transmission and distribution grid onshore and offshore.

6.1.15. **National Biodiversity Action Plan 2023 – 2030 (NBAP)**: The NBAP has a list of Objectives which promotes biodiversity as follows, Objective 1 Adopt a whole of government, whole of society approach to biodiversity; Objective 2 Meet urgent conservation and restoration needs; Objective 3 Secure nature's contribution to people; Objective 4 Enhance the evidence base for action on biodiversity; Objective 5 Strengthen Irelands contribution to international biodiversity initiatives. The Wildlife (Amendment) Act 2023 provides that every public body, as listed in the Act, is obliged to have regard to the objectives and targets in the National Biodiversity Action Plan.

6.1.16. **National Landscape Strategy for Ireland 2015-2025:** The Strategy will be used to ensure compliance with the European Landscape Convention and to establish principles for protecting and enhancing the landscape while positively managing its change. The Strategy is a policy framework which will inform and assist in the resolution of challenges arising from competing priorities when dealing with the landscape, and assist in the achievement of greater consistency in decision making. The Strategy will inform and assist in the resolution of challenges arising from competing priorities in the landscape, for example: infrastructural provision versus landscape protection, or local versus national objectives.

6.1.17. **Wind Energy Development Guidelines - Guidelines for Planning Authorities (2006)** (referred to as the 2006 Guidelines hereafter): The 2006 Guidelines advise that a reasonable balance must be achieved between meeting Government Policy on renewable energy and the proper planning and sustainable development of an area and it provides advice in relation to the information that should be submitted with planning applications. The impacts on residential amenity, the environment, nature conservation, birds and the landscape should be addressed. The guidelines provides guidance on siting and design within the landscape, and identifies six landscape character type. The guidelines notes that .it is common for wind farms to be located in one landscape character type but be visible from another, and that the entire visual unit should be considered.

6.1.18. **Draft Wind Energy Development Guidelines (2019)**, (referred to as the 2019 Draft Guidelines hereafter): The 2019 Draft Guidelines propose several key amendments to the original document in relation to noise, visual amenity, shadow flicker and community engagement. The advice relating to siting, design and landscape are largely the same as the 2006 Guidelines. These guidelines emphasis that wind turbines in order to optimise wind resources are often located in elevated exposed locations, and that given their size and appearance wind turbines will be prominent within the landscape. It is stated that wind turbines cannot be "hidden", and that the most effective way of minimising landscape and visual impacts are through site selection, turbine type and positioning and layout.

6.2. Regional Spatial Economic Strategy

6.2.1. The Regional Spatial Economic Strategy for the Southern Region 2020-32 (RSES) seeks to support the delivery of the programme for change set out in Project Ireland 2040, the NPF and the NDP, and to ensure coordination between the City & County Development Plans and Local Enterprise & Community Plans. It seeks to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the sustainable expansion of the transmission network. The RSES acknowledges climate change as the most important long term challenge facing Ireland and states that the Regional Assembly is committed to implementing regional policy consistent with the CAP. It recognises and supports the many opportunities for wind as a major source of renewable energy and recognises that wind energy technology has an important role in delivering value and clean electricity for Ireland.

6.2.2. Regional Policy Objectives (RPOs) of relevance are RPO 87 Low Carbon Energy Future, RPO 95 Sustainable Renewable Energy Generation, RPO 96 Integrating Renewable Energy Sources, RPO 98 Regional Renewable Energy Strategy, RPO 99 Renewable Wind Energy, RPO 219 New Energy Infrastructure, RPO 221 Renewable Energy Generation and Transmission Network, and RPO 222 Electricity Infrastructure.

6.3. Carlow County Development Plan 2022-2028

6.3.1. The Carlow County Development Plan 2022-2028 (referred to as the Development Plan hereafter) came into effect in July 2022. Key relevant policy and objectives of the Development Plan are noted below.

6.3.2. **Chapter 7 Climate Action and Energy**

Aim is "to combat climate change and its impacts in the County by promoting and supporting policies and objectives which contribute towards a transition to a low-carbon and climate resilient future, and which focus on reducing greenhouse gas emissions and energy demands through appropriate and effective climate mitigation and adaptation measures."

Climate Action and **Renewable Energy**, relevant policies and objectives:

- **Policy CA P1,** promotes and supports the implementation of European, national, regional, and local objectives for climate change adaptation and mitigation.
- **Policy CA P2**, supports the transition of the County to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency.
- **Policy RE P1**, to "encourage and facilitate the production of energy from renewable sources, such as from wind, solar, bioenergy, hydroelectricity, and geothermal, subject to compliance with proper planning and environmental considerations." **Objective RE O1**, seeks to achieve a minimum of 130MW of renewable electricity in the County by 2030.
- **Policy RE P2**, support the co-location of renewable energy technologies.

Wind Energy provisions:

- Section discusses "site suitability" factors, and balance between responding to positive national renewable energy policy and enabling harnessing of wind energy resources and in a manner that is consistent with proper planning and sustainable development.

- Section identifies onshore wind energy as the largest contributor to total renewable energy generation in the County, a current installed capacity of c. 5.8 MW which represents less than 0.1% of the installed national capacity.
- Section discusses the Renewable Energy Strategy (RES) (Appendix VI), and the technical mapping exercise for wind opportunities and constraints in the county as per Figure 7.7. See Section 6.3.9 below for a summary of the RES.
- Landscape Character Assessment, Appendix VII, specifically Figure 6 identifying "Landscape Types" (included as Figure 7.8 in Chapter 7). It is stated that wind farm development in the more elevated Uplands Landscape Type, identified as having the highest landscape sensitivity rating of 5, out of a rating scale of 1 to 5, will not normally be permissible.
- **Objective WE O1**, to "increase the penetration of wind energy generation in County Carlow at appropriate locations and scale and subject to compliance with proper planning and environmental considerations."
- **Policy WE. P1**, to have regard to Wind Energy Guidelines.
- **Policy WE. P4**, "wind farm development will not normally be permissible in the Uplands Landscape Type as shown in Figure 6 of the Carlow County Landscape Character Assessment included as Appendix VII to this Plan…"
- **Policy ES. P1**, to "promote the use of efficient energy storage systems and infrastructure that support energy efficiency and reusable energy system optimisation, subject to compliance with proper planning and environmental considerations."

6.3.3. Chapter 9: Landscape and Green Infrastructure

Four Landscape Character Areas (LCA) in County Carlow are identified in Map 9.1. The subject site is located within the Killeshin Hills LCA, which is described as follows:

> "This character area lies on the western side of the County on the border with Counties Kilkenny and Laois and a short segment of County Kildare. The area is bounded to the east by the river Barrow Valley with the R448 skirting along the east side of the valley. The lands adjoining the river valley are gently undulating hills which ascend steeply to uplands adjoining County Kilkenny:

the Castlecomer Plateau. There are extensive panoramic views of the entire County to be had from the eastern slopes.

The area is almost entirely a rural agricultural landscape with a moderate level of sensitivity and moderate potential capacity to absorb different types of development. Due to its upland character and relative exposure, it has a low potential capacity to absorb rural housing or industrial development."

Four **Landscape Types** (LT) have been identified within the Killeshin LCA and The subject site is located within the Killeshin Hills LCA, Uplands LT.

Landscape sensitivity is identified in the section as "a way of measuring the ability of the landscape to accommodate change or intervention without suffering unacceptable loss of character or value".

- "Low sensitivity" is identified as landscape where "a wide range of developments would sit comfortably in a particular landscape and not interfere with a character or interfere with or eliminate a value."
- "Highly sensitive" is identified as a landscape "where any development proposal would seriously damage a character or eliminate or seriously damage an irreplaceable value."

The Killeshin Hills LCA, Uplands LT which is relevant to the subject site has landscape sensitivity rating of 5 (Most) which is also the highest rating. Moving east from the Uplands LT, and within the Killeshin LCA, the Farmed Ridges LT has a rating of 4 (Increasing), Farmed Lowland LT rating is 2-3 (Decreasing-Moderate), and Broad River Valley has a landscape sensitivity rating of 4 (Increasing).

Landscape capacity is referred to as the capacity of the landscape *"to visually absorb certain land uses, development, or physical change, without affecting its visual character or quality"*, and which can be influenced by topography, vegetation or development, or a combination of these factors. Table 9.2 identifies the Killeshin Hills LCA as having Moderate landscape capacity for wind farms. None of the LCAs are identified as having greater than Moderate landscape capacity for wind farm, and Mount Leinster-Blackstairs LCA is identified as having a Low landscape capacity.

Visual impacts on the landscape are described as having the potential to be individual or cumulative, result in gradual erosion of the landscape value, arise from

siting, scale or design, or from a development being incongruous or alien in its landscape setting, or be significant for the local landscape setting or for a more extensive area. Selection of appropriate sites within the landscape is critical to minimising visual impacts, together with careful consideration of details of layout, design, height, scale, bulk, use of materials etc.

A presumption against development proposals located on elevated and visually exposed sites is stated in Section 9.5 of the CDP.

A schedule of Views and Prospects are provided in Table 9.3 and Scenic Routes are provided in Table 9.4. The following Views and Prospects are identified in the planning authority's Reason for Refusal No. 1:

- No. 27: South of Nurney – View 280-340º, of hill with forest at Newtown/Bradley's Cross
- No. 28: Newtown – Vista west, of Killeshin Hills
- No. 31: Ridge Cross – Vista east, panorama across central plain to Blackstairs
- No. 32: Tuolcreen Cross – Vista east, panorama from Killeshin Hills across central plain to Blackstairs
- No. 33: Milford – View east and north, of River Barrow
- No. 34: Muine Bheag – View south, of town from point to north of entrance along River Barrow

The following Scenic Routes are identified in the planning authority's Reason for Refusal No. 1:

- No. 4: R725-1, Grangford Road – Central Plain
- No. 5: L3052-42, Ballyryan – Mixed landscape low level to west
- No. 6: L7123-0, Ridge Cross Roads – Central plain
- No. 7: L3037-11, Road to the Butts – Panorama across central plain
- No. 8: L7130-26, Tomard Wood – Panorama to southeast
- No. 9: L3041-19, Tomard Lower – Panorama across the central plain

Chapter 9 sets out the policies and objectives that seek to protect the landscape of County Carlow. The following are considered relevant as they relate to windfarm developments:

- **Policy LA P1**, *"protect* and maintain the overall integrity of the County's landscape, by recognising its capacity to sustainably integrate and absorb appropriate development, and by ensuring that development protects, retains and, where necessary, enhances the appearance and character of the landscape, and does not unduly damage or detract from those features which contribute to its value, character, distinctiveness and sensitivity e.g. landform, habitats, scenic quality, settlement pattern, historic heritage, amenity, land use and tranquillity."
- **Policy LA P2**, "ensure that development will not have a disproportionate landscape or visual impact in sensitive upland areas of the County (due to siting, layout, design or excessive scale, height and bulk) and will not significantly interfere with **or detract from scenic upland vistas**, when viewed from the surrounding environment, including nearby areas, scenic views and routes, and from settlements."
- **Policy LA P3**, "adopt a presumption against developments which are located on elevated or visually exposed sites or areas with open exposed vistas, and where the landscape cannot accommodate such development with appropriate mitigation."
- **Policy LA P4**, "ensure that developments on steep slopes or ridges will not be conspicuous or have disproportionate landscape or visual impacts when viewed from the surrounding environment, including from nearby areas, scenic views and routes, and from settlements."
- **Policy LA P6**, "require all developments, having regard to their landscape setting, to be appropriate in siting, layout, design and scale, in order to ensure any potential adverse or landscape and visual impacts are minimised and/or removed where necessary, and that natural site features and characteristics are retained and maintained."
- **Policy LA P7**, "facilitate, where appropriate, developments that have a functional and locational requirement to be situated on steep or elevated sites (e.g.

reservoir, telecommunication masts or wind energy structures) where residual adverse visual impacts are minimised or mitigated."

- **Policy LA P8**, "require, where appropriate, Landscape/Visual Impact Assessments to be prepared by suitably qualified professionals, for development proposals which may have significant landscape or visual impacts, and/or which are located within or adjacent to sensitive landscapes."
- **Policy LA P9**, "have regard to the potential for screening vegetation when evaluating proposals for development within the uplands."
- **Policy LA P10**, "ensure that features which contribute to local landscape character, including historic features and buildings, trees, hedgerows, shelter belts and stone walls, are retained, protected, and enhanced where appropriate, so as to preserve the appearance and local landscape character of an area, whilst supporting sustainable landscape change and development. Development proposals necessitating the removal of such features will be discouraged."
- **Policy LA P11**, "protect and preserve the established appearance and aesthetic attributes of views and prospects that contribute to the inherent quality of the County's landscape, including views, prospects and scenic routes listed in Tables 9.3 and 9.4, and particularly views to and from mountains, hills, river valleys and river corridors, and views of historical or cultural value (including buildings and townscapes) and views of natural beauty."
- **Objective LA O1**, "Ensure that the management and assessment of development throughout the County takes account of the recommendations and assigned Landscape Character Areas, Landscape Types, and Landscape Sensitivity, and the Schedule of Views, Prospects and Scenic Routes, as contained in this Plan, and in accordance with Government Guidance on Landscape Character Assessment and the National Landscape Strategy."
- **Objective LA O2**, "ensure landscape/visual impact assessment will be a key consideration in the assessment of development proposals within the County."

6.3.4. Chapter 5 Sustainable Travel and Transportation,

- **Policy LR. P1**, ensure that the safety and capacity of the local road network is maintained.

6.3.5. Chapter 10: Natural and Built Heritage

The aim is "to protect, conserve, manage and enhance the natural and built heritage features of the County, to ensure the survival of their intrinsic value for future generations and to ensure they contribute to the future sustainable development of the County."

Key Policies and objective include:

- **Policy NH. P1**, protect, manage and enhance the natural heritage, biodiversity, landscape and environment.
- **Policy NH. P2**, ensure, as far as is practicable, that development does not adversely impact on wildlife habitats and species and move towards no net loss of biodiversity.
- **Policy NH. P3**, protect non-designated biodiversity, habitats and species not otherwise protected by legislation. **Policy ND. P2**, ensure no significant adverse impact.
- **Policy NS. P1**, protect the Natura 2000 network; **NS. P2**, consider impacts within zone of influence of Natura 2000 sites; and **NS.4** maintain and restore the favourable conservation status of Natura 2000 sites.
- **Policy NHA. P1**, protection of NHAs and pNHAs.
- **Policy WT. P2**, ensure hedgerow removal to facilitate development is kept to an absolute minimum.
- **Policy IW. P2**, *"protect the biodiversity of rivers, streams and other watercourses, to maintain them in an open state, to discourage culverting or realignment, and where possible, uncover existing culverts and restore the watercourses to acceptable ecological standards and for the passage of fish."*
- **Policy IW. P3**, control of encroachment on watercourses and protection of watercourses; **IW. P5**, maintain a 10m biodiversity protection buffer zone of all watercourses; **IW. P7**, no deterioration downstream from development runoff and treatment prior to discharge; and **IW. P9**, not adversely affect groundwater resources.
- **Policy GH. P1**, protect and enhance the geological and geomorphological heritage.
- **Policy IS. P1**, prevent spread of invasive alien species.

- **Policy AH. P1**, secure the preservation (either in situ or by record) of all archaeological monuments; and **AH. P3**, protect, conserve and enhance the archaeological heritage.
- **Policy PS. P2**, ensure the protection and conservation of the character, setting and special interest of protected structures. **PS. P3**, developments that affect protected structure to be in accordance with the 'Architectural Heritage Protection: Guidelines for Planning Authorities'.

6.3.6. Chapter 11: Tourism and Recreation

- **Policy R. P4:** Develop, in conjunction with local communities, short walking routes; **R. P5**, facilitate, where appropriate, the provision of walking and cycling trails in co-operation with relevant agencies and bodies; **R. P7**, support the maintenance of existing off-road walking and cycling trails and the development of new such trails; and **R. P8**, support and promote public access to upland areas, waterways, and other natural amenities.

6.3.7. Chapter 14 Rural Development

- **Policy FD. P1**, support farm diversification which is complementary to existing agricultural practices, including renewable energy production.
- **Policy FR. P2**, encourage access to forestry and woodlands.
- **Section 14.12** outlines that rural areas have the potential to be harnessed for renewable energy projects including wind, hydro and solar energy, reference to Appendix VI.
- **Policy RE. P1**, facilitate agriculture, horticulture, forestry, tourism, energy production, small scale home-based enterprises and rural resource-based enterprises, subject to proper planning and environmental considerations.

6.3.8. Chapter 16: Development Management Standards

Relevant sections include:

- Section 16.12.2 Energy Development Projects outlines that proposals or energy development will be considered in the context of current Government policy on the subject but will take into account other, often competing Council policies on

land usage relating to sectors such as agriculture, tourism and outdoor recreational activities, the protection of sensitive landscapes, sensitive ecological sites, and any relevant guidelines issued from time to time by the Department of Housing, Local Government and Heritage.

- The section also notes topics relating to human health including noise shadow flicker, ground conditions and air quality and water quality. It further notes that reasonable alternatives should be addressed.
- Section 16.12.3 Wind Energy, states:

  > "The Council acknowledges the role of wind energy as a renewable energy resource. Chapter 10 Climate Action and Energy and Appendix VI Renewable Energy Strategy detail policies and objectives for this sector over the period of this Plan. When assessing planning applications for wind energy developments the Council will have regard to the Wind Energy Development Guidelines for Planning Authorities, DoEHLG, (2006) and any amendments to the Guidelines which may be made and the Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change (2017). Applications shall be accompanied by all relevant environmental assessments including impact on collision risk species (birds and bats). Applications will also be required to ensure that development is in accordance with the guidance provided in Chapter 9 Landscape and Green Infrastructure and Appendix VII Landscape Character Areas with regard to compatibility between the land use and the principal Landscape Character Areas of the County and the proximity to Landscape Sensitivity Factors."

- Section 16.10. 2, assessment of road traffic safety.
- Section 16.11.10, underground cables.
- Section 16.14.1, natural heritage.
- Section 16.14.2, protected habitats, plants, animals and birds.
- Section 16.14.3, archaeology.

6.3.9. Appendix VI – Carlow County Renewable Energy Strategy

Section 1.2 states that the RES is vital to enable the county to full harness its natural resources in a way that is both economical and sustainable, and it provides a

comprehensive assessment of the area to identify the most sustainable locations for developments.

The vision of the RES is “to encourage and support the transition of Carlow to a sustainable county through community engagement, energy efficiency and the sustainable development of renewable energy, whilst providing environmental and economic benefit at a local and national level in accordance with all relevant planning and environmental considerations.”

Section 7.1 states, “Carlow aims to improve its energy efficiency and to increase the overall share of renewable energy in electricity, transport and heat, playing its role in implementing Ireland’s Climate Action Plan.”

The Strategy sets out a county target for renewable energy to achieve up to 130MW capacity by 2030, including up to 100MW installed from solar farm and up to 30MW installed from wind farm.

Wind Energy is covered in Section 6.1 of the RES, in summary:

- “Onshore wind energy is the largest contributor to total renewable energy generation in Carlow, which reflects the national status of wind energy contribution.”
- At the time of plan adoption there was an installed capacity of c. 5.8 MW of onshore wind power in the county, representing less than 0.1% of the installed national capacity.
- Section 6.1.4 in terms of failure of past planning applications for wind farms, notes “they have been rejected on the basis that they would interfere with the landscape and visual amenities.”
- Capacity for new wind farms in lowland areas.
- Table 6-4 identifies an up to 30MW installed utility scale wind resource capacity for the county, and following the exclusion of MWs taken up by, or anticipated from, existing sites, permitted site, extension and repowering, the opportunity for new wind farms is identified as 6MW capacity.
- Table 7-2 identifies a Delivery Action of enabling more wind farm development of up to 30 MW installed capacity.

In relation to Killeshin Hills which is relevant to the subject site, the RES identifies the following wind energy potential:

- Figure 6.2 identifies wind speeds >8m/s or >7.75m/s and Figure 6.3 identifies the subject site within a viable wind speed area.
- Permitted Bilboa Wind Farm is shown within Killeshin Hills.
- Table 6-3 identifies Killeshin Hills LCA to have Moderate capacity for wind farms as per the LCA (Appendix VII).
- Figure 6.4 identifies the subject site within the Uplands Landscape Type and designated as wind farms "not normally permissible." The Uplands Landscape Type as the highest landscape sensitivity rating of 5 as per the LCA (Appendix VII).
- No environmental designations noted to preclude wind farm construction identified for the Killeshin Hills as stated in Section 6.1.5.1.
- Dispersed settlement pattern in the area in relation to separation distance to dwellings. No >5km^2 area or available areas with >500m from housing identified.
- Table 6-5 includes the reference to Development Plan Objective W1, Policy W1.1, W1. 2, and Policy W1.3.
- Section 6.1.5.1. Landscape and visual capacity section concludes, "any proposals for new wind farms would need to include a more detailed site-specific assessment of both technical constraints and landscape/ visual amenity impacts, including potential to impact on the designated Protected Views and Scenic Routes in the County Development Plan."

6.3.10. Appendix VII - Landscape Character Assessment and Schedule of Protected Views

The Landscape Character Assessment for County Carlow was first produced in 2008, and then updated in 2015 as part of the County Development Plan review process. This revised document (2015) forms part of the current Carlow County Development Plan 2022-2028,

Of note, the Landscape Character Assessment as adopted in 2009 is reproduced in Part Five of the document. Amendments to the Landscape Character Assessment are included Part 2 Sensitivity Mapping and Part Three and Four which include the

additional Scenic Routes and Protected Views. The updated Landscape Character Assessment also includes an Addendum containing 'combined and consolidated tables and maps for the Schedule of Views and Prospects and the Schedule of Scenic Routes.

The Landscape Character Assessment groups and maps the landscapes of the County into four major Landscape Character Areas, and includes detailed recommendations for their management, protection, and conservation. The site is located within the Killeshin Hills LCA. Within the LCAs, seven generic landscape types (LT) were identified and document notes that with the exception of the Blackstairs Mountains, the variations in landscape type are subtle rather than distinctive. The site is located within the Uplands LT. Farmed Ridges, Farmed Lowland and Broad River Valley are the other main LTs identified within Killeshin Hills LCA.

The key characteristics of the Killeshin LCA are described as follows:

- "Rural character with few settlements.
- Distinct prominence of Castlecomer Plateau forms a backdrop to the area and separates the County from Kilkenny.
- Mixture of grassland, rough gazing, and forestry plantations at higher elevations.
- River Barrow forms eastern edge of area.
- Isolated stone quarries and lime workings have left a mark on the landscape.
- Open views and vistas with extensive views across the entire County from ridges and from the Castlecomer Plateau."

Killeshin LCA is identified as a predominately rural agricultural landscape of moderate sensitivity and of moderate capacity to absorb different types of development. The east facing slopes are noted to *"enjoy sweeping panoramic views"* and to have a low potential capacity. In regard to wind farm, a moderate scope is identified subject to appropriate mitigation measures and similar to overhead cable and masts, should be selectively located, for example on farmed secondary ridges where the primary ridge would form the backdrop, or in the lowland farming area.

The policy objective for Killeshin Hills is to “balance conservation with enhancement of the existing landscape character. New developments to maintain integrity of landscape character area though careful location, siting and design. Forestry to respect the grain of the landscape.”

Sensitivity Mapping in Part 2 of the Landscape Character Assessment is provided “to ensure that there a comprehensive and easily understood framework to guide development in Carlow while also ensuring better consistency with the Landscape Character Assessments of adjoining counties.” The sensitivity rating is from 1 (least) to 5 (most), with Uplands LT rated as 5 as per Table 1 and illustrated in Figure 4. The Sensitivity Mapping does not alter the boundaries of the adopted LCAs and LTs as reproduced in Part Five of the document. The validity of the approach is noted to be confirmed by the location of the majority of the viewpoints and scenic routes within the most sensitive LTs as shown in Figure 2.

Scenic Views and Prospects and Scenic Routes identified in the planning authority’s Reason for Refusal No. 1, and which generally aligns with those in the vicinity of the appeal site, and in the direction of the site are listed in Section 6.3.3 above.

6.4. Kilkenny City and County Development Plan

6.4.1. The proposed Wind Farm site is located adjacent to Co. Kilkenny. The Kilkenny City and County Development Plan 2021-2027 came into effect on the 15th October 2021.

6.4.2. Landscape is addressed in section 9.2.12 of the development plan, and the Landscape Character Assessment (2008) is appended to the plan. Figure 9.2 identifies the area to the west of the proposed Wind Farm site and within County Kilkenny as Upland LCA, and sub-type Castlecomer Plateau (B). Landscape sensitivities for this LCA as per Figure 9.3 is contours with ridges marked to the north and the west. Protected Views V13 and V11 are identified in the vicinity of the site. The Castlecomer Plateau is an extensive upland area with an almost circular shape that lies between the valleys of the Rivers Nore and Barrow, it gently undulates and gives rise to several small ridgelines at an elevation of between 200 and 340m above the sea level. nearly all ridgelines are primary when viewed from the lowland area.

6.5. Natural Heritage Designations

6.5.1. The River Barrow and River Nore SAC is adjacent to Philip's Bridge on the L1850 (L30371), immediately west of The Butts, and adjacent to the Black Bridge L1837(L1835). The River Nore Special Protection Area (SPA) is located approximately 15.7km to the southwest of the proposed Wind Farm site.

6.5.2. The nearest Natural Heritage Area (NHA) is Mothel Church, Coolcullen a proposed NHA (000408) located approximately 2.3km from the L30371 at Philip's Bridge. Coan Bogs NHA (002382) is located c. 3km to the north.

7.0 The Appeal

7.1. Grounds of Appeal

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

Reason for refusal No. 1 – Policy:

- Submits that the proposed development neither material contravenes nor is contrary to the proper planning and sustainable development of the area, given the contradictory policies within the CDP and policy WE. P4, along with wind energy zoning and target, is not consistent with national and regional renewable energy policy.
- Submits that a refusal on wind energy policy and landscape and visual grounds would eliminate the opportunity to generate renewable energy in one of the very few suitable sites in Co. Carlow and would therefore, be contrary to the proper planning at a national level
- Submits that policy WE. P4 is not aligned with national and European Policy and legislation, as it hinders wind energy development in Co. Carlow. Submits that the 6MW target for new wind energy capacity is not aligned with national target and insufficient quantum of viable land outside of the "Not Normally Permissible" zoning for Co. Carlow to adequately contribute to the national 9GW wind energy target.
- Submits that the spatial zoning for landscape and wind energy in Co. Carlow are incongruent and are not fit for purpose. The "Not Normally Permissible" zoning of

Uplands Landscape Type conflicts with the identification of Killeshin Hills having Moderate capacity for wind farming as Table 9.2 of the CDP. Submits that Killeshin Hills comprises some of the only viable areas of wind energy development in Co. Carlow, and that uplands landscapes is an eminently suitable landscape for absorbing wind energy developments. Submits that policy WE. P4 is conflicting with landscape policy LA. P7 which takes account of functional and locational requirements in facilitating developments on steep or elevated sites.

- Submits that the context of landscape and visual impacts should be considered from an LVIA perspective.
- Submits that the local landscape, referring to the site itself, it is a highly suitable receiving environment for the infrastructure of a wind farm development as assessed within the LVIA.
- Submits that the proposed development is appropriately sited and scaled within the upland landscape of the Killeshin Hills when viewed from the east. There is an absence of ridges and peaks within Killeshin Hills, the ridgeline where the turbines are seen is not considered a distinct and recognisable landmark, and, in reference to 2006 Guidelines and Draft 2019 Guidelines, it is considered that the absence of a backdrop when viewing is advantageous as this eliminates potential for visual confusion and ultimately reduces the magnitude of visual effects.
- Submits that when viewed from the north, west and south that the proposed development is appropriately and effectively absorbed in the upland landscape of the Killeshin Hills.
- Submits that the proposed development will not significantly impact the key sensitivity of any designated scenic amenity designations and that these have been comprehensively assessed in the LVIA.

Reason for refusal No. 2 – Traffic and Transport:

- Submits that the network and junctions will continue to operate within capacity as demonstrated in the EIAR.
- Submits that the existing local road network should be capable of providing for standard HGV deliveries. Commitments include for pre-condition and post-construction surveys, repairs and reinstatement bond.

- Submits the proposed development does not represent a traffic hazard or will result in an obstruction to road users. A Stage 1 Road Safety Audit Report is included in Appendix 2 of the appeal.
- Submits that as per the EIAR, L-30372 and L-7123 are not proposed to be used as construction haul routes.
- Submits that the proposed strengthening works to Black Bridge are the same as those permitted for White Hill Wind Farm (Condition 16, ref. 31365-22, and can be dealt with by condition for the proposed development.

Reason for refusal No. 3 – Noise:

- Submits that the HSE submission does not include a specific objection to noise or any specific reason or recommendation for refusal on the grounds of noise.
- Submits that it is not the case that the proposed development is increasing the cumulative noise level by 10 dB above background. Submits that a comparison of predicted cumulative noise levels to background noise levels in isolation is inappropriate given the low background noise levels.
- Submits that the appropriate test to consider in relation to noise is whether the proposed development can operate in accordance with the relevant guidelines, the 2006 Guidelines.
- Submits that the EIAR demonstrates that taking account of mitigation measures the predicted cumulative noise levels would comply with the 2006 Guidelines. Submits that the assessment was supplemented by the ETSU-R-97 and the IOA GPG.
- Submits that the use of 2006 Guidelines to set noise limits is consistent with recent planning permission for wind farms, (ref. 317227 and 315933).
- Submits that the planning condition proposed by the applicant controls A-weighted noise levels, and sets clear and enforceable noise limits, includes a mechanism for the council to request compliance monitoring in the event of a complaint and sets out the methodology that should be used should an assessment be required.

7.2. Planning Authority Response

7.2.1. Planning authority response (27th August 2024) to grounds of appeal is summarised as follows:

- Refers to the details set out in the reports of the planning authority.
- Submits that Carlow County Development Plan 2022-2028 has a generally supportive stance on wind energy development. Opportunities to achieve renewable energy targets are anticipated to predominately come from solar energy, with a significantly more limited proportion anticipated from wind farm developments due to significant landscape sensitivities.
- Submits that cumulative impacts with adjacent permitted schemes, in this particular location in an unbroken expanse of the land and in the Killeshin Hills upland landscape, are more significant than in a more undulating landscape area. Submits that Draft 2019 Guidelines notes that in terms of cumulative effect a landscape of complex landform and landcover provides a greater possibility of screening for more than one wind energy development.
- Submits the proposed development is contrary to Policy WE. P4 and Policies LA. P1, LA. P2, LA. P3, and LA. P11. Submits that the proposed development will not integrate the landscape, and its overall impact is deemed to be disproportionate taking into consideration adjoining wind farm development and the overall landscape sensitivity rating of 5.
- Submits that the appeal response has not satisfactorily demonstrated that the local road network is of adequate capacity and design to accommodate the frequency and volume of HGV traffic including cumulative wind farm traffic.

7.3. Observations

7.3.1. 3 No. observations were received within the statutory timeframe from:

- Rural Residents Wind Aware & Environmental Group (with commissioned opinions from Hydro G, Grosvenor Consulting and Huson & Associates appended).
- Justin & Susan Hayden.
- Mary Farrell.

7.3.2. The combined pertinent matters can be summarised as follows:

Summary of Issues Raised	Location in report
Principle of Development: • Lands are mapped as 'not normally permissible' with respect to wind energy developments. WE.P4 Wind farm development will not normally be permissible in the Uplands Landscape Type. • Contrary to the relevant provisions of Carlow County Development Plan 2022-2028. • Decision should await the new regulations replacing the 2006 guidelines, these are imminent. • Replanting of forestry outside the county does not ensure proper and sustainable forestation policy as per Carlow County Development Plan 2022-2028, which objective is to promote forestry.	Sections 8.3 & 8.6
Layout and scale: • Inadequate spacing of turbines having regard to 2006 Guidelines. The density is far higher than anything permitted in any region. • Decreasing the actual performance of each turbine. Set a very negative precedent. • 6.6MW power ratios have only been used in offshore turbines. Offshore scale turbines being proposed onshore. • Adjoining properties cannot afford 20m micro siting.	Section 8.6
Residential amenity: • Against all planning principles to allow such structures to be built in close proximity of homes. • Inadequate setback of the proposed turbines. Noise receptors are less than 720m setback. • Totally unfair to ask residents to live within the effects of three wind farms in such a populated area. 30 homes will live within a wind farm development. • Devalue of home and impact on enjoyment and of home from noise and visual pollution. A large body of studies has found that wind farms reduce the value of property significantly. • A lot of people that work from home. Home and work hours will be both affected by the dominant structures of wind turbines. • A residential amenity visual assessment has not been carried out.	Section 8.4
Population: • Carlow County Development Plan Map 14.1 identifies population growth for this area. The area should be protected from wind farm development. • Detrimental effect to the area on human population.	Section 9.6
Biodiversity (including Birds): • Impact wildlife including birds, and impact from forestry felling on wildlife, detrimental effect on the habitats directives. • Serious cumulative effects, cumulative assessments are limited in scope. • Close proximity of sweep area to ground level will mean huge impacts on bats and birds, not considered in the EIAR.	

Summary of Issues Raised	Location in report
• Direct vicinity to River Barrow and River Nore SAC, and potential for significant effects to riverine species and habitats. • Impact on Kingfisher and Nore SPA. • The site is raised wetland with forestry. • Little information provided on habitats that surrounds this area, Peregrine Falcons, Hen Harriers, otters and fish species. • Correlation studies identifies rare and protected species Seskin, White Hill and Bilboa Wind Farm. • Cumulative deforestation. • Bat surveys carried out are incomplete, no survey above canopy, no bats trapped to verify species. Wind turbine should be located in green fields further than 200m from wooded areas. Reference to Eurobats Publication Series no. 6.	Sections 9.7, 9.8 & 10.0
Geology, peat and carbon: • No site investigation to the depth of foundation footings, excavation between 10 and 20m likely. The design requires an understanding of how turbines are going to be anchored into solid ground. • Specification of stone and imported fill not shown, no quality control mitigation measures. • Proposed to deliberately move almost 30,000m3 of peat, and that this only accounts for turbine foundations. • Loss of 19ha of forestry and removing capacity of sequestration of 5 million kgs of CO2 emissions. • Point method for site investigation is outdated and has led to many failures. • Risk of peat failure. • CEMP is presented as a working document, precedent of risk and uncertainty. • Technical competencies of the companies behind Land, soil and geology and hydrology and hydrogeology chapters.	Section 9.9
Water: • No detail has been presented for the assessment with respect to impact on Public Water Supply, potential impact on Gowran Regional Water Supply and Paulstown Water Supply Scheme. • Impact on private wells. • Omission of Risk Assessment obligation of the EU Drinking Water Regulations 2023 (SI 99 of 2023) in terms of public water supply and groundwater. • Concerns regarding groundwater vulnerability and impacts on groundwater flow including fracture fissures in bedrock, altering groundwater flows. The result of no peat at 40% of probes indicates 'Extreme Groundwater Vulnerability and Rock Outcrop'. • The site is located in close proximity to Dinin (South)_020, "Good Status" and "Not at Risk", and the headwaters of the River Barrow and River Nore SAC. This is not presented or assessed for impact correctly. • No validation within the EIAR that WFD has been followed and considered.	Section 9.10 and Section 10.0

Summary of Issues Raised	Location in report
• Impact on water quality from soil erosion from ground disturbance and heavy traffic, disturbance of surface water pattern, surface water runoff from deforestation. Deficient sediment control measures • Seskin is located in a depression on a raised plateaux, naturally falling away from the northwest into the SAC and water finds its way to Nore and Barrow. Major influence on ground water corridors in the surrounding area.	
Noise: • ETSU-R-97 and IoA Good Practice Guide, 2013 ETSU-R-97 are under review and not fit for purpose. • Day and night time noise limits are set to high, the 2006 Guidelines noise level targets should be reduced. • Risk associated with the scale of turbine which has not been built onshore in Ireland, no prior on-site assessment can be assimilated prior to construction. • Not considered increase in sound power level from wake effect. • No noise contour maps submitted. • Cumulative sounds from 19 no. turbines will be channelled (due to prevailing winds) into homes and work place. • Health effects from wind turbine noise, sleep disturbance and low frequency noise. • The candidate turbine with the greatest maximum rated output capacity (Siemens-Gamesa SG6.6-155, 6.6MW) was not used for the noise predictions. Use of manufacturer's sound power data. • Incorrect reference to White Hill Wind Farm, the Vesta V162 6.2MW and a hub height of 100m • The 2006 Guidelines requires that there is no significant increase in ambient noise levels at any nearby residential receptors, this has noted been addressed. • Application of noise limits set for consented wind farms to the proposed Wind Farms is not appropriate. • The EIAR is deficient in the assessment of low frequency noise and infrasound. • AM is discussed at length in the EIAR but reaches no conclusion on a penalty scheme. • Wind turbine acoustic pollution cannot be emolliated by landowner involvement.	Section 9.13
Landscape and Visual: • No regard shown for the landscape to absorb the amount and scale of wind turbines, over development and dominates the landscape. • Severe impacts on the landscape character and visual impact of the areas. • Concerns regarding scale of the turbines, an eyesore and visual pollution. • Visual pollution impacting on enjoyment and tranquillity of the area. • Destroy scenic view and scenic Ridge Drive.	Section 9.15

Summary of Issues Raised	Location in report
Material Assets: • Damage to roads and whether roads can accommodate the traffic. • Telecommunications impacts. • Concerns regarding impact on the flight path of planes and helicopters.	Section 9.16
EIA Directive: • Design Flexibility is contrary to the EIA Directive 2014/52/EU, amending Directive 2011/92/EU. By not confirming turbine type to be used, there is no way of confirming EU conformity in reference to Machinery Directive 2006/42/EC. • Cumulative assessment inadequate. • Poorly prepared and biased information issued within the EIAR.	Sections 8.6 & 9.0
Other Matters: • 10 year planning permission, an avoidance of new planning regulations. • No meaningful consultation with community. Community was not consulted at feasibility, design or EIA stages and was told what happened when the plans were complete. Reference to Code of practice for WE development 2016 and Aarhus Convention. • Residents of the community refused to engage because they knew that their voices would not be heard. • Fails to assess transboundary impacts by not considering the source material of the wind turbines, reference to Espoo Convention of Environmental Impact Assessment in a Transboundary Context, 1991.	Sections 8.6 & 9.4

7.3.3. It should be noted that a number of observations made by Rural Residents Wind Aware & Environmental Group (RRWA&EG) appear to relate to White Hill Wind Farm and/or Bilboa Wind Farm rather than the proposed development given the development or locational references provided. Where observations, are of a general nature and could be considered of relevance to the proposed development, I have taken note of them in the summary of pertinent matters above. Where, locational references have been provided and these clearly relate to White Hill Wind Farm or Bilboa Wind Farm and are not relevant to the proposed development, I have not included them in my summary. I specifically note references to previous refusal of wind farm development, an unrelated forestry licence, previous planning refusal from 2014 (no application reference provided), and management plan for and trees encroaching on Red Bog (located to the north of L7127).

8.0 Assessment

8.1. Introduction

8.1.1. I have examined the application details and all other documentation on file, including the appeal, submission received in relation to the appeal, and inspected the site. I have had regard to relevant local/regional/national and European policies and ministerial and other guidance where relevant. I am satisfied the substantive issues for assessment relate generally to planning and sustainable development, the Environmental Impact Assessment (EIA), Appropriate Assessment (AA), all detailed below separately in the individual sections. In the interests of brevity, I have sought to avoid, where possible, undue repetition and instead indicating where overlaps occur.

8.1.2. I consider that the key planning and sustainable development issues arising are as follows:

- Principle of the Development and Policy Context
- Residential Amenity
- Cumulative Development
- Other Matters

8.1.3. Section 9.0 below assesses **Environmental Impact Assessment**. Section 10.0 including Appendix 1 and 2 of this report assesses **Appropriate Assessment**. In this regard, I have addressed Reason for Refusal No. 1 below and in Section 9.15 Landscape and Visual. I have addressed Reason for Refusal No. 2 in Section 9.16 Material Assets. Reason for Refusal No. 3 is addressed in Section 9.13 Noise and Vibration.

8.2. Principle of the Development and Policy Context

8.2.1. Renewable Energy Generation

The proposed development includes for 7 no. wind turbines with a total rated output of 46.2 MW for 35 years, and with supporting BESS, which will be exported to the national grid.

As set out in Section 6.1 above, national policy (including the NPF First Revision and Climate Action Plan 2024 and 2025) include objectives to support proposals which aim to achieve a climate neutral economy and sets national renewable energy targets. Such objectives and targets are also repeated at a regional policy level, Southern RSES, which seeks to facilitate the sustainable development of additional electricity generation capacity throughout the region and to support the sustainable expansion of the transmission network.

Support for climate action and increase in renewable energy are also outlined at a local policy level, in particular I note the renewable energy policy RE P1 in the CDP which seeks to encourage and facilitate production of energy from renewable sources including wind, and wind energy objective WE O1 which seeks to increase the penetration of wind energy generation subject to compliance with proper planning and environmental considerations. Objective RE O1 sets a county target of up to 130MW of installed renewable energy capacity by 2030, which includes up to 30MW of installed wind energy capacity as identified within the Renewable Energy Strategy (RES, CDP Appendix VI). Of this, only 6MW is identified to come from new wind farms and the Two Year Progress Report (July 2024), without any site specific development references, outlines that permissible MW renewable energy since the adoption of the CDP have already exceeded the WE O1 target.

It is important to note that the CDP predates the First Revision of the NPF (2025) and specifically NPO74, which allocates a 978MW of additional onshore wind capacity delivery target to the Southern Region by 2030. There are no amendments to the Southern RSES currently in response to NPO74, which would see an allocation of this target to Carlow County Council and for which the county will require to plan for the delivery of as per NPO75. In this regard, I note that the current county target of up to 30MW installed capacity equates to 3% of the delivery target set for the Southern Region by 2030 and includes existing operational wind energy. I find myself in agreement with the applicant that the up to 30MW of installed wind energy target (including only 6MW from new wind farms) does not appear to reflect the overall national policy commitment of delivering 9GW from onshore wind farm by 2030. In my view, the use of the wording “up to” in both WE O1 and the RES indicates a cap on the county’s contribution towards the delivery of national renewable energy targets which is not consistent with national policy and targets.

Having regard to the above, the provision of electricity by onshore wind farms is supported by national, regional and local policy. The proposed Wind Farm, when operational, will contribute to Irelands 2030 renewable energy target and climate action commitments. I note the planning authority considers the proposed Wind Farm to be largely acceptable in principle on this matter.

8.2.2. Local Wind Energy Policy Context

There is clearly support for renewable energy including wind at a local policy level, and section 7.10.3.1 states that "the Council is required to achieve a reasonable balance between responding to overall positive Government policy on renewable energy and enabling the wind energy resources of the County area to be harnessed in a manner that is consistent with proper planning and sustainable development." In this regard, Policy WE. P4 sets out that wind farm development will "not normally be permissible" in the Uplands Landscape Type (LT) as shown in Figure 6 of the Landscape Character Assessment (Appendix VII). The planning authority's Reason for Refusal No. 1 states that to permit the proposed development would be contrary to policy WE. P4. The applicant in the Appeal Submission outlines that the proposed development neither material contravenes nor is contrary to the proper planning and sustainable development of the area, and given the contradictory policies within the CDP and policy WE. P4, along with wind energy zoning and target, is not consistent with national and regional renewable energy policy.

The proposed Wind Farm is located within Killeshin Hills Landscape Character Area (LCA) and the Uplands Landscape Type (LT) and as such, is within an area "Not Normally Permissible" for wind energy development. The Uplands LT is also the only constraint that informs the "Not Normally Permissible" area for wind farm development as shown on Figure 6.4 of the RES (Appendix VI). Having reviewed other wind farm development constraints as identified within the RES, I note the appeal site is located within an area of viable wind speeds and an area not constrained by environmental designations. There are no settlements above village scale within the area and road networks in the area consists of local roads. The dispersed settlement pattern within the Killeshin Hills in terms of achieving a minimum 500m separation distance to dwellings is noted as a potential constraint. In this regard, the applicant has demonstrated that the proposed turbine layout

achieves the minimum 500m setback distance, and can achieve a setback distance of 4 x maximum 180m tip height, to residential dwellings as per the Draft 2019 Guidelines. I further note EIAR Figure 3-1 which provides a useful overview of the site development constraints which have informed the proposed Wind Farm layout.

Killeshin Hills Landscape Capacity

Considering the original Landscape Character Assessment (2008) which is reproduced in Part Five of the amended Landscape Character Assessment (2015) as appended to the current CDP (Appendix VII), I note the LCAs and the LTs for the county as identified remains unaltered. These were not altered by the 2015 amendment which introduced Sensitivity Mapping. The county contains four LCAs and the Killeshin Hills LCA (Figure 5) includes four LTs including the Uplands LT. The Landscape Character Assessment notes that the variations between landscape types in Co. Carlow are subtle. It describes the Killeshin Hills' Uplands LT as uplands adjoining Kilkenny with geology that corresponds with the Castlecomer Plateau, is predominately a rural agricultural landscape and noted to have panoramic views of the county from the eastern slopes. The Landscape Character Assessment assigns a Moderate level of landscape sensitivity and a Moderate landscape capacity to absorb different developments to the Killeshin Hills LCA. The matrix, on page 38, following a consideration of both landscape sensitivity and capacity concludes that the Killeshin Hills LCA has a Moderate capacity for wind farm development subject to appropriate mitigation measures, including being selectively located, for example on secondary ridges allowing the primary ridge to form a backdrop. Section 9.4 of the CDP also confirms the Moderate landscape sensitivity and capacity of the Killeshin Hills LCA and Table 6-3 of the RES confirms the Moderate landuse capacity of the Killeshin Hills LCA for wind farms. The Sensitivity Mapping, a 2015 addition to the Landscape Character Assessment, appears to apply a broad sweep sensitivity rating (rating carried out at an increasing scale from 1 to 5) across the various generic Landscape Types (Table 4). A rating of 5 and Most sensitive has been applied to all Uplands LTs. I note there are no clear methodology outlined within the assessment for the rating and Sensitivity Mapping, although Section 7.10.3.1 of the CDP seeks to elaborate on the matter and outlines that landscape types *"often contain more significant and sensitive landscapes that are highly valued for scenery and amenity*

and include a large number of protected views, prospects and scenic routes" including the Uplands LT. This indicates an emphasis on landscape value and not necessarily a consideration of the sensitivity of a landscape to accommodate change. In this regard, and as noted above, the assessment of landscape sensitivity to accommodate change along with capacity of the landscape to accommodate development have been carried out in the Landscape Character Assessment (Part Five). Landscape Character as per the European Landscape Convention is defined as "a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another". In the context of Co. Carlow, and in my view, the four identified LCAs correlate to this. Whilst these LCAs are further informed by the LTs, the variations between the generic LTs when considered within the context of the LCAs are apparent when comparing the assessment of the upland areas of Killeshin Hills LCA with the upland areas of Blackstairs and Mount Leinster Uplands LCA. The uplands/mountain areas of the Blackstairs and Mount Leinster Uplands LCA are identified as the most important in the county and highly sensitive to change. In comparison, Killeshin Hills LCA is described as being almost entirely a rural agricultural landscape with a moderate level of sensitivity and moderate potential capacity to absorb different types of development. Given this, it is evident that the sensitivity to accommodate change varies between these two different Uplands LTs as they relate to the LCAs within which they are located, and that these variations have not been reflected in the Sensitivity Mapping.

Permitted Wind Farms within Killeshin Hills

The appellant has outlined that the Carlow County Development Plan 2015-2021, which was informed by the same Landscape Character Assessment, identified the Killeshin Hills as a "Preferred Location" for wind energy developments. Whilst this is noted, the proposed Wind Farm can only be considered under the terms of current policy. I do, however, consider the application of policy WE P4 in recent decision for wind farm developments within Killeshin Hills LCA to be of relevance. In this regard, Carlow County Council's Planner's Report, for the resubmission of the expired Bilboa Wind Farm (reg. ref. 22/340), in applying the Upland LT restrictions of policy WE. P4 considered that there were key factors when considering the principle of the development including site history, the applicant's landscape assessment,

contribution of the consented scheme within the RES, RE O1 and WE O1, and "the location of the site on the north western periphery of the county in the Killeshin Hills which has a moderate capacity to absorb such developments as per the provisions of the Landscape Character Assessment." The "Schedule 1: Reason and Considerations" of the report found the Bilbao Wind Farm to be in accordance with county policy for wind energy. The Inspector's Report, for the same development (ref. 318295), concurred with the conclusion of the planning authority that favourable consideration of the proposal in principle was appropriate, and further noted the recent grant of White Hill Wind Farm (ref. 315365-22) within the same Uplands LT. For the White Hill Wind Farm, partially located within the Killeshin Hills LCA, the Carlow County Council's Chief Executives Report considered the wind farm to be contrary to the provisions of Policy WE P4. The Inspector found the *"principle of the proposed development at this location does not, as suggested, materially contravene the principle of policy WE P4 of the recently adopted Carlow County Development Plan."* There are as such, two wind farm developments granted within the Killeshin Hills LCA under the local policy framework of the current CDP.

Functional and Locational Requirements

Also of relevance to wind farm developments is landscape policy LA P7. LA P7 makes specific reference to wind energy structures recognising the functional and locational requirement of these to be situated on steep or elevated sites. In my view, these functional and locational requirements for wind energy developments are not facilitate in policy WE. P4 given the identification of elevated areas e.g. the Uplands LT within the county as areas where wind energy development is "Not Normally Permissible". The RES by identifying areas of viable wind speed takes account of functional requirements, but given the majority of the areas are elevated these are identified as "Not Normally Permissible" as these largely corresponds with the Uplands LT.

Having regard to the above, I consider there are conflicting objectives within the adopted CDP as they relate to the 'Uplands' landscape type, and specifically within the Killeshin Hills LCA. The application of a generic constraint to Uplands LT within policy WE P4 is inconsistent with the overall assessment of the Killeshin Hills LCA as having a Moderate sensitivity and capacity (Section 9.4 of the CDP) and Moderate

landuse capacity for wind farms (RES Table 6-3). Furthermore, I concur with the applicant that there are inconsistencies between wind energy policy WE. P4 and landscape policy LA P7 with policy WE P4 not recognising the functional and locational requirements of wind farm development for an elevated site with viable wind speeds. This is apparent in Figure 6.4 of the RES, where the majority of the viable wind speed areas corresponds with the “Not Normally Permissible” areas as a result of the application of the Uplands LT landuse constraint. It is important to note here that the Landscape Character Assessment does not at any stage identify the generic Uplands LT as a landuse constraint to wind energy development, this constraint is specifically stated in policy WE P4 and supported by the RES. In my view, policy WE. P4 by excluding the majority of areas with viable wind speed from wind energy development on what appears to be a tenuous, or at least conflicted, landscape constraint can be considered to not encourage or facilitate production of energy from renewable sources such as wind within the county and can therefore, be considered inconsistent with policy RE. P1.

Conclusion

Considering the above, I am satisfied that the location of the proposed Wind Farm within the Killeshin Hills, on the north western periphery of the county, has a moderate capacity to absorb such developments as per the provisions of the CDP as set out in the Landscape Character Assessment (appendix VII) and Table 6-3 of the Renewable Energy Strategy (Appendix VI). The functional requirements for the proposed elevated location within the Uplands LT correspond with the viable wind speed areas as identified by Figure 6.4 of the RES. Furthermore, the proposed Wind Farm is located in an Uplands Landscape Type within the county where the principle of wind farm developments has been considered acceptable under the provisions of policy WE P4 of the CDP. I also note that the planner’s report considers that the capacity of the sensitive upland landscape to absorb wind farm development within Killeshin Hills have been met rather than wind farms being an unacceptable within this landscape type. In this context, I am satisfied that the Commission can conclude that the principle of the proposed Wind Farm at this location does not materially contravene the principle of policy WE P4 of the adopted Carlow County

Development Plan 2022-2028. The Commission should not, therefore, consider itself constrained by Section 37(2) of 2000 Act, as amended.

Assessment of landscape and visual impacts which are relevant to landscape policies LA. P1, LA. P2, LA. P3 and LA. P11 are considered in Section 9.15 below.

8.3. Residential Amenity

8.3.1. Observations have raised concerns regarding impact on residential amenity as a result of the proposed development, and impacts on home working which I considered to be incidental to residential amenity. I have addressed these under the main topics below and made reference to the EIA in Section 9.0 where applicable.

8.3.2. Setback from individual properties

Observations note inadequate setback of the proposed turbines from dwellings and references the noise assessment in EIAR Chapter 12.

There is no minimum setback distance within 2006 Guidelines. The proposed turbine layout setback from residential dwellings exceeds the minimum distance of 500m as per the Draft 2019 Guidelines, and meets the 4 x maximum tip height (180m) i.e. 720m. I am satisfied that distance to residential receptors as noted in the noise assessment relates to the curtilage of the residential receptors rather than the dwelling and which is standard procedure for noise assessment. I am, therefore, satisfied that the setback distances to residential properties as per the Draft 2019 Guidelines have informed the layout of the proposed Wind Farm as per EIAR Figure 3-1.

8.3.3. Visual residential amenity

I note the 2006 Guidelines provide guidance on the appropriate setting and design of turbines. I note the location of dwellings in the vicinity of the turbines and the associated terrain, which I have considered in more detail in Section 9.15. I conclude therein that there is the potential for a small number of residential properties located to the west and north (within c. 800m) to experience significant visual effects where these have elevated primary views towards the proposed turbines. I do not consider,

taking account of the setbacks provided, that the proposed Wind Farm, individually or cumulatively, would dominate the visual amenity of these properties.

8.3.4. Shadow Flicker

I have addressed matters relating to shadow flicker in Section 9.6 below, and I conclude that with the application of mitigation, there will be no shadow flicker on habitable residential receptors, individually or cumulatively, as a result of the proposed Wind Farm.

8.3.5. Noise

I have addressed noise in Section 9.13 below. The operational noise levels can be controlled by noise limits, and I am satisfied that the predicted noise levels, individual and cumulatively, subject to mitigation measures, will not exceed the level recommended in the 2006 Guidelines.

8.3.6. Impact on property values

Observations have raised concerns regarding the impact on property values including cumulative impacts.

Section 5.7 of the EIAR outlines findings from research into wind farms and property values, and I note conclusions from international studies vary and that no empirical studies have been carried out in Ireland. Certain studies indicate that there is the potential for wind farms to impact property values in the immediate area, but that the impact reduces throughout the operational phase of a wind farm. The EIAR outlines that this suggests that property values react negatively to the expectation of likely impacts and construction of a wind farm. I note the third party submissions on the impact of property values refer to many of the same studies, and that research referred to does not suggest that the presence of more than one wind farm would double the effects. I consider the information in the EIAR has sufficiently addressed the matter.

Therefore, I do not consider the proposal would lead to any significant negative impact on the property values in the vicinity of the site. In reaching this conclusion, I have had regard to the information in the EIAR and the layout of the proposed

turbines in a sparsely populated areas with the closest turbine being 724m from a habitable dwelling.

8.3.7. Conclusion

Considering the above, I am satisfied that the assessment submitted by the applicant is sufficiently comprehensive to conclude on residential amenity impacts. Having regard to the location of the site, the proximity of proposed turbines to the existing dwellings, the design of the turbines and the mitigation measures involved during the construction and operational phases, I am satisfied that the proposed Wind Farm would not have any significant negative impact on the residential amenity of the residents of properties in the vicinity of the site.

On balance, based on National Policy supporting renewable energy (see Section 6.0), I consider that the potential benefits associated with renewable energy generation including wind energy within the context of a climate emergency, outweigh the potential perceived adverse visual effects for a small number of residential receptors. I am therefore satisfied, that the proposed Wind Farm would be consistent with the Climate Act and National Policy in support of renewable energy and a refusal of permission would not be warranted on the basis of residual visual effects on residential receptors.

8.4. Cumulative Development

8.4.1. I have reviewed the submitted cumulative wind energy development baseline as outlined in the EIAR and I am satisfied that the baseline is sufficiently up to date. Coolglass Wind Farm (c. 15.6km separation distance) which was included as proposed in the EIAR has since been refused and the decision to refuse has since been quashed (317809-23). Freneystown Wind Farm is still not subject to a valid planning application. I further note that in terms of the overall proposed Grid Connection Route (20.1km), no longer includes Kilderry Solar Farm which grid connection has been refused or White Hill Wind Farm where alternative grid connection is being pursued.

8.5. Other Matters

8.5.1. Design Flexibility

Observations have raised concerns regarding design flexibility and the EIA Directive, and in relation to this the EU Machinery Directive. As noted in Section 3.0 above, a design flexibility opinion was issued by Carlow County Council on 14th March 2024 in respect of the proposed development and as per legislative provision under the Planning and Development, Maritime and Valuation (Amendment) Act 2022, amending the 2000 Act, as amended. Case law in England (R v Rochdale Metropolitan Borough Council ex parte Milne (2001)) has established that an assessment of likely significant effects under the EIA Directive does not prevent flexibility, and that assessing parameters is acceptable and often necessary, as long as such flexibility and the likely significant effects resulting from such flexibility is assessed. In terms of the proposed development, the parameters for which design flexibility was sought are clearly identified in the opinion by Carlow County Council and reiterated in the EIAR Chapter 2. My EIA assessment is set out in Section 9.0, and I am satisfied that the likely significant effects of the agreed design flexibility parameters have been clearly identified and assessed in the relevant technical section of the submitted EIAR.

Concerns raised regarding the EU Machinery Directive and the application's compliance with same are not considered one for the Planning Code or the Commission.

8.5.2. Scale and Layout

Observations have raised concerns regarding offshore scale turbines being proposed onshore. The applicant's consideration of turbine numbers and model are outlined in Chapter 3 of the EIAR. Furthermore, I note that larger turbines of a tip height of 180m or higher are common to the onshore market and have been permitted onshore in Ireland including the adjacent White Hill Wind Farm. My EIA as set out in Section 9.0 assessment takes account of the scale of the proposed turbines.

Chapter 3 of the EIAR details that the layout of the proposed Wind Farm has had regard to the 2006 Guidelines and the Draft 2019 Guidelines, and that the design

process was iterative. Observers have raised concerns regarding turbine performance and reference the 2006 Guidelines and windtake. I note the selection of turbine numbers and layout have taken account of wind resources including windtake, wind monitoring is ongoing and that the layout has been optimised. The scale of the turbines are also noted to reflect the efficient use of the wind resource. In regard to the 2006 Guidelines, the reference to windtake in Section 5.13 and 7.17 relates to the development potential of adjoining sites, and I note the proposed turbines are located sufficient distance from the permitted wind farm sites. As above, my EIA as set out in Section 9.0 assessment takes account of the location and layout of the proposed turbines.

Observations have raised concerns regarding setback to residential dwelling and potential micrositing of up to 20m. Chapter 4 of the EIAR refers to micrositing within the criteria set out in accordance with the 2006 Guidelines may be required i.e. not extend beyond 20m. As noted above, there are no setback distance detailed within the 2006 Guidelines and the proposed turbine layout achieves the setback distances detailed within Draft 2019 Guidelines. I note four habitable and non-participating properties are located within a range of 730m to 740m from the nearest proposed turbine. While micrositing could potentially reduce or increase the distance to these properties, I am satisfied that micrositing will not impact on the proposed turbine layout achieving the minimum setback of 500m and any impact on the proposed turbine layout achieving a 4 x maximum tip height setback would be limited.

8.5.3. Forestry

Observations have raised concerns that no replanting within the site would be contrary to the objective of Carlow County Development Plan 2022-2028 to promote forestry, and cumulative deforestation concerns. As noted previously, the proposed Wind Farm will result in the loss of 19ha of commercial forestry within the site. I note there are no specific objectives or policies within the CDP which seek to protect commercial forestry. I am satisfied that the proposed replanting on a ha by ha as proposed at an alternative location is in line with the Forestry Standards Manual (July 2024) which specifically makes reference to wind energy developments within forestry. Given the requirements for replanting, I do not consider the proposed Wind Farm will contribute towards cumulative deforestation as noted in observations.

8.5.4. Duration of Permission

The permission period sought is 10 years and I recommend this is conditioned in the event the Commission is minded to grant permission. In my view, the duration of permission sought reflects that established for onshore wind developments and reflects the complexities involved in progressing these types of developments through to construction and commissioning.

The Commission will note that observations have raised concerns that the request for 10 year planning permission is an attempt by the applicant to avoid new planning regulations and to comply with the out of date 2006 Guidelines. In this regard, there are no updates on an anticipated publication date for new guidelines to replace the 2006 Guidelines, and as such, these remain valid.

8.6. Comments on Conditions

8.6.1. Table 8.1 lists conditions recommended by the internal departments in Carlow County Council and prescribed bodies as per Section 4.0 above. I have indicated whether these conditions are included or excluded from the recommended schedule of conditions (Section 13.0 below).

Table 8.1 Conditions Recommended by Carlow County Council and Prescribed Bodies

Conditions Recommended by Carlow County Council (CCC) and Prescribed Bodies	In/Exclusion in Recommendation
CCC Environment Department	
Adherence to all mitigation measure/monitoring in the EIAR, NIS, CEMP including refence specific construction measures: • CIRIA C532 "Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors. • NRA, Guidelines from Crossing of Watercourses during the Construction of National Road Schemes; instream works in accordance with IFI guidelines. • Construction noise, BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014. • Dust levels, less than 350mm/m2/day (30 day composite sample). • Off carriageway parking facilities. • Prevention measures relating to muck, dirt, debris etc. entering public road.	Included in mitigation measures condition.

Conditions Recommended by Carlow County Council (CCC) and Prescribed Bodies	In/Exclusion in Recommendation
• Waste management. • Noise and dust emissions	
Construction hours Monday to Friday 07.00-19.00, Saturday 07.00-16.00 and none on Sunday/Bank Holidays, unless otherwise agreed.	Included in schedule of conditions.
CCC Environment Department	
Implementation of mitigation measures including: • Construction Management Plan (CMP) and Surface Water CMP • Drainage system and measures, and no increase in discharge rates. • Water quality monitoring programme. • No surface water to be dispersed onto public road/adjoining properties.	Included in mitigation measures condition.
Fire Services	
Risk assessment of BESS and suppression system	Included in schedule of conditions.
Irish Aviation Authority (IAA)	
Pre-construction screening assessment of enroute communications, navigation and surveillance.	Included in schedule of conditions.
• Aeronautical obstacle warning lighting agreement. • Notification of crane operations. • Provide as-constructed coordinates.	Included in schedule of conditions.
HSE	
Mitigation measures outlined in the EIAR, specific reference to: • No occurrence of shadow flicker within 1.55km study area mitigation measure. • Land, soils and geology including peat management mitigation measures • Water quality mitigation measures. • No direct or indirect emissions of waste water into ground or surface water. • Dust control measures. • Construction noise mitigation measures. • Noise mitigation measures in Section 12.7.2 of the EIAR.	Included in mitigation measures condition.
Ongoing consultation and community liaison officer, and implementation of a comprehensive complaints procedure.	Included in mitigation measures condition.
DAU Consultation	

Conditions Recommended by Carlow County Council (CCC) and Prescribed Bodies	In/Exclusion in Recommendation
Chapter 13 mitigation measures.	Included in mitigation measures condition.
• Employ suitable archaeologist. • Carry out pre-development archaeological testing. • Site preparation/groundworks archaeological impact assessment report.	Included in mitigation measures condition.
Update CEMP to include all archaeological or cultural heritage constraints identified in Chapter 13.	Included in schedule of condition.

9.0 Environmental Impact Assessment

9.1. Introduction and statutory provisions

9.1.1. This section sets out an environmental impact assessment (EIA) of the proposed Wind Farm.

9.1.2. The proposed Wind Farm comprising 7 wind turbines and an output of 46.2MW exceeds the threshold for mandatory EIA, as per Part 2 (3)(i), Schedule 5 of the Planning and Development Regulations, 2001 (as amended).

9.1.3. The submitted EIAR considers the totality of the Proposed Project i.e. the proposed Wind Farm, BESS, 38kV substation, proposed grid connection route (combined route of c. 20.1km), turbine delivery route and all associated works as located within both Co. Carlow and Co. Kilkenny.

9.1.4. For the purpose of this appeal, I have focused my assessment on the potential environmental impacts as a result of the proposed development (also referred to as the proposed Wind Farm) i.e. the 7 no. wind turbines, BESS, a 38kV Substation, grid connection route (2km) and other associated work, all within Co. Carlow. My assessment of cumulative effects, firstly, considers the potential for in-combination effects with the Proposed Project, specifically the proposed grid connection route and turbine delivery route accommodation works, all with Co. Kilkenny, and secondly, with other relevant developments.

9.2. EIA Structure

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

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

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

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

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

- population and human health,
- biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive,
- land, soil, water, air and climate,
- material assets, cultural heritage and the landscape,

- the interaction between the above factors, and
- the vulnerability of the proposed development to risks of major accidents and/or disasters.

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

9.3. Issues Raised in Respect of EIA

9.3.1. Issues raised in respect of EIA by parties to the appeal are discussed in Sections 4.0 and 7.0 above and include the following:

- Biodiversity / Natura 2000 sites
- Birds
- Geology and peat
- Hydrology and hydrogeology
- Traffic and transport and other material assets
- Noise
- Landscape and visual
- Climate

9.3.2. The issues raised will be assessed under the relevant sections in this report.

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

9.4.1. The applicant's EIAR comprises of the EIAR (Main Text) including Chapters 1 – 18 and EIAR References, Landscape and Visual Figures (14-1 to 14.21) & Photomontages (Viewpoints 01 – 15), Appendices 2 - 1 to 15-6, and a stand-alone Non-Technical Summary (NTS).

9.4.2. Compliance with the requirements of Article 94 and Schedule 6 of the Regulations is assessed below.

Table 9.1 Compliance with the requirements of Article 94 and Schedule 6

Article 94 (a) Information to be contained in an EIAR (Schedule 6, paragraph 1)
• A description of the proposed development comprising information on the site, design, size and other relevant features of the proposed development (including the additional information referred to under section 94(b).
Chapter 1 provides a description of the site location including maps (section 1.1.2). Chapter 4 provides a description of the Proposed Project including details on the location, layout, project components, peat and spoil management, tree felling and replanting, site activities, access and transportation, community gain proposals, site drainage, construction methodologies, as well as operation and decommissioning. It is noted that the Proposed Project does not involve demolition works. The description is adequate to enable decision making.
• A description of the likely significant effects on the environment of the proposed development (including the additional information referred to under section 94(b).
An assessment of the likely significant direct, indirect, and cumulative effects of the proposed development is carried out for each of the technical chapters of the EIAR, Chapter 5 to 16. Interactions are considered in EIAR Chapter 17, and a Schedule of Mitigation and Monitoring Proposals is presented in EIAR Chapter 18. I am satisfied that the assessment of significant effects is comprehensive and robust and enables decision making. Observations have raised concerns that potential transboundary effects have not been assessed in reference to the origin of raw wind turbine materials, and refers to the Convention on Environmental Impact Assessment in Transboundary Context (Espoo Convention). It is in this regard important to note that the Espoo Convention incorporates Principle 19 of the RIO Declaration. Bearing this in mind, I am satisfied that in terms of the proposed development the “state” in the context of the “party of origin” is Ireland and that the activity being considered is the proposed development which will not result in transboundary effects, significant or otherwise. Furthermore, the activity of extracting raw material whether for the manufacturing of wind turbines or other manufacturing processes would be subject to its own consenting process and/or environmental impact considerations depending on its origin.
• A description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset

likely significant adverse effects on the environment of the development (including the additional information referred to under section 94(b).
The EIAR includes designed in mitigation measures and measures to address potential adverse effects identified in technical studies. These, and arrangements for monitoring, are outlined in appendices including additional information appendices and summarised in Chapter 18 (Schedule of Mitigation Measures) and Appendix 4-4 (CEMP). Mitigation measures comprise standard good practices and site-specific measures and are largely capable of offsetting significant adverse effects identified in the EIAR, for the reasons stated in the assessment below.
• A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment (including the additional information referred to under section 94(b).
A description of the alternatives considered is contained in Chapter 3 of the EIAR. The alternatives considered include, 'do nothing', alternative site locations and renewable energy technologies, alternative turbine numbers, models, layout and development design, alternative design of ancillary structure, alternative grid connection route options, alternative transport route and site access, and alternative mitigation measures. The main reasons for opting for the current proposal were based on minimising environmental effects. I note the Planner's report raises no concerns on the reasonable alternatives considered. I am, therefore, satisfied that the applicant has studied reasonable alternatives in assessing the proposed development and has outlined the main reasons for opting for the current proposal before the Commission and in doing so the applicant has taken into account the potential impacts on the environment.
Article 94(b) Additional information, relevant to the specific characteristics of the development and to the environmental features likely to be affected (Schedule 6, Paragraph 2).
• A description of the baseline environment and likely evolution in the absence of the development.

A description of the baseline environment for the Proposed Project has been provided in each of the technical chapters of the EIAR. A likely evolution in the absence of the development is provided under the 'do nothing scenario'. I am satisfied that a comprehensive understanding of the baseline environment has been provided and enables identification of key impacts in respect of likely effects as a consequence of the proposed development. I comment on baseline, where necessary in the technical assessment below.

- A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved

The methodology employed in carrying out the EIAR, including the forecasting methods is set out, in each of the individual chapters assessing the environmental effects.
The applicant has indicated in the different chapters where difficulties have been encountered (technical or otherwise) in compiling the information to carry out EIAR. I comment on these, where necessary in the technical assessment below and for the reasons stated, I am satisfied that forecasting methods are adequate in respect of likely effects.

- A description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it.

This issue is specifically dealt with in Chapter 16 of the EIAR. Specific risks have been identified in relation to the vulnerability of the Proposed Project including the proposed development to traffic incident, contamination and fire.

Article 94 (c) A summary of the information in non-technical language.

This information has been submitted as a separate standalone document. I have read this document, and I am satisfied that the document is concise and comprehensive and is written in a language that is easily understood by a lay member of the public.

Article 94 (d) Sources used for the description and the assessments used in the report

The sources used to inform the description, and the assessment of the potential environmental impact are set out within each chapter. I consider the sources relied upon are generally appropriate and sufficient.
Article 94 (e) A list of the experts who contributed to the preparation of the report
A list of the various experts who contributed to the report are set out in Table 1-4 in Chapter 1 of the EIAR and in Appendices. Where relevant the introductory section of each of the chapters also details of the individual's expertise, qualifications which demonstrates the competence of the person in preparation of the individual chapters within the EIAR. The Planner's report in their review of EIAR Chapter 6, supported by appointed external consultants (Blackstaff Ecology), sought details of the experience of the field survey team. In this regard, I note relevant experience detail is stated within Chapter 6 and the relevant appendices of Chapter 6. Third party observations (RRWA&EG, with commissioned opinion by Hydro-G) have raised concerns regarding the competency of consultancy companies involved in the preparation of the EIAR, specifically in reference to Chapter 7 Land Soil and Geology, Appendix 8-1 and Appendix 4-4 CEMP. I note these are all established consultancy companies and that the observations raised no specific concerns relating to the technical competency of the experts who have contributed to the EIAR. I am satisfied that the EIAR has been prepared by experts with competency in the technical subject areas.

9.4.3. Consultations

Observations have raised concerns regarding consultations, and noted that consultation was not carried out during the preparation of the EIAR.

The application has been submitted in accordance with the requirements of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended) in respect of public notices.

Consultations are described in Chapter 2, Sections 2.7 and 2.8 of the EIAR. The applicant carried out scoping consultation with Carlow County Council, Kilkenny County Council, prescribed bodies, other non-governmental organisations, utility providers and telecommunication providers. Public consultations were carried out between March 2022 and August 2023 and are outlined in Section 2.8.1 and

Appendix 2-2 of the EIAR. Door-to-door consultation was carried out within 1 to 2km from the proposed Wind Farm site, meeting the requirements of the 2006 Guidelines and the Draft 2019 Guidelines, and supplemented with various advertisement.

I note the planning authority's concern that the EIAR appears excessive and reference to the EPA Guidelines (2022) on effective public participation. In this regard, I note the EIAR is a self-contained document, all topics included are of relevance to the EIAR, supplementary information has been included in appendices, and I note each chapter includes a contents page which assist with navigating the EIAR, and therefore, I considered the EIAR aligns with guidance provided by the EPA. As noted above, I consider the NTS acceptable, and I note the planning authority concurs with this.

In regard to concerns raised by observations, I note the timescales of Phase 1, 2 and 3 of the consultation process as detailed in Appendix 2-2, and I note that this period spans the majority of site surveys informing the baseline of the EIAR and therefore, the EIA related design process of the Proposed Project.

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

9.4.4. Compliance

Having regard to the foregoing, I am that the information contained in the EIAR is sufficient to comply with article 94 of the Planning and Development Regulations, 2001. Matters of detail are considered in my assessment of likely significant effects, below.

9.5. Assessment of Likely Significant Effects

9.5.1. This section of the report sets out an assessment of the likely environmental effects of the proposed development under the environment parameters, as set out Section 171A of the Planning and Development Act 2000, as amended (see paragraph 9.2.3 above). Where relevant, headings based on the environmental parameters have

been subdivided to better reflect the layout of the submitted EIAR and the main environmental considerations of the proposed development.

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

9.6. Population and Human Health

9.6.1. Issues Raised

The Planner's report outlines that due consideration has not been given to the immediate area with regards designated scenic routes and viewpoints as a tourism asset. Matters outlined in the planner's report and in the reason for refusals relating to noise impacts (Chapter 12) and visual impacts (Chapter 14) have been considered under those specific chapters and will not be repeated herein. Issues raised in regard to visual amenity and property values have been addressed in Section 8.4 above. Observations note that the CDP identifies population growth for the area.

9.6.2. Context

Population and Human Health is addressed in Chapter 5 and Appendices 5-1 to 5-4 of the EIAR.

9.6.3. Baseline

Residential receptors:

- The closest inhabitable dwelling is located approximately 724m from the nearest proposed turbine T3 (identified as a Participating Property). A derelict property is noted to be located approximately 563m from T3.
- There are 117 no. properties within 1.55km (or ten rotor diameters) including 13 dwellings with planning permission and 6 derelict buildings (H1, H2, H3, H4, H5, H28). 16 are Participating Properties (including 3 of the 6 derelict properties),

properties that belong to landowners involved in the Proposed Project (H6, H10, H13, H20, H21, H22, H36, H42, H43, H57, H59, H66 and derelict properties H3, H4, H5).

- Approximately 92 no. properties are located within 100m of the proposed grid connection route.

Existing **land use** within the site comprises coniferous forestry and agriculture, and within the wider area a mix of agriculture, peat cutting, quarrying, low density residential and commercial forestry is noted. For the proposed grid connection route, existing land uses comprises of public road corridor, public open space, agricultural field, coniferous forestry and areas of natural vegetation. The cumulative wind energy baseline for the surrounding area identifies the operational Gortahile Wind Farm (3.1km to the north) and the permitted Bilboa Wind Farm (1.2km to the north) and White Hill Wind Farm (2.5km to the southwest).

Carlow Town is 19.1km to the northeast of the site, other smaller settlements centres include Oldleighlin (3.1km to the southeast), Leighlinbridge (5km to the southeast) and Castlecomer (9.9km to the northwest). Amenities and community facilities are mainly located within settlements, although opportunities for walking and cycling and outdoor recreation within the varied environment of County Carlow and County Kilkenny are noted in terms of both amenities and tourist attraction. There are two local schools within 3km of the site, and one stud farm within 10km of the site. In terms of tourism, approximately 5% of overseas tourist to the country visited the South-East Region and the region benefitted from approximately 6% of the total tourism income generated in Ireland in 2019. Tourist centres and attractions within the wider study are listed in Chapter 5.

The **population** study area was defined in terms of the District Electoral Divisions (DEDs) within which the proposed Wind Farm is located, specifically Ridge and Rathorman DEDs. Based on 2022 census figures, the population within the 37km^2 study area is 729 and the population density is 19.70 persons per km^2 (69.08 person per km^2 at county level). Population data shows a 1% decrease for the study area compared with a 9% increase in population at county level. There was an increase in the number of households (+10) within the study area as well as a decrease in the average persons per household, although the average household size in the study area remains above that at county and national levels. The local population age

structure varies from that at county and national level, notably there is a greater percentage of the local population in the 45-64 and 65+ age categories and a substantially lower percentage of the local population in the 25-44 age category. The proportion of the local population (15+) who are in the labour force is lower than the average at county and national levels, and the majority of the population not within the labour force (+15) are Retired or Student.

9.6.4. Likely Potential Effects

Table 9.2: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• Land use will continue. Opportunity to facilitate renewable energy generation lost.
Construction	• The presence of construction site and associated travel, potential health and safety hazard. Short term and potential significant negative impact. • Employment, investment and tourism: Approximately 80-100 jobs (short term), construction workers and materials will be sourced locally, increased local spending, upskilling and training). Forestry employment on site can continue during construction. Short term moderate positive employment and investment effect. No impacts on tourism predicted. • Land use, population and property values: Change in land use within the site to facilitate the proposed Wind Farm, small section of existing forestry to be felled. No other land use changes predicted. No change in population trends predicted. Potential for a short-term slight negative impact on property values. • Residential Amenity: Potential for increased air (Chapter 10), traffic (Chapter 15), noise (Chapter 12), and vibration (Chapter 12) emissions to impact on residential amenity, short-term slight negative impact.
Operation	• Health and Safety: Not anticipated to present a danger to the public and livestock, a potential long term slight impact predicted. • Employment, Investment and tourism: Approximately 2-3 jobs (long term), rental income to landowners, rates payment, community benefit funds (approximately 240,000/year based on current RESS terms). Forestry employment on site can continue during operation. Long term slight positive effect on employment and investment. No tourism attractions or amenity walkways located within the site and no adverse impact on tourism infrastructure in the vicinity predicted. • Land Use, population and property values: Permanent footprint will occupy 2% of the site, main land use will remain forestry and agriculture. No impact on land use within the wider area. No change in population trends predicted. Potential for long term slight negative impact on property values.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• Shadow Flicker: No inhabitable dwellings located within 500m of a proposed turbine. No shadow flicker mitigations required for the 6 derelict properties and the remaining 13 Participating Properties. The findings from the theoretical precautionary conditions indicate that 61 of the remaining 98 no. properties may experience daily and annual shadow flicker occurrences. Comparative models for turbines of alternative dimensions confirmed the precautionary approach of lowest hub height and maximum rotor diameter (maximum tip height) resulting in maximum shadow flicker. A potential long term moderate negative impact predicted. • Residential Amenity: Potential impacts could arise from noise (Chapter 12), shadow flicker (as above), changes to visual amenity (Chapter 14) or interference with telecommunications (Chapter 15). Project capable of meeting noise thresholds as per 2006 Guidelines. Taking account of distance to turbines and screening in the area, no significant impact on existing visual amenity predicted. No impact on telecommunications. • Renewable energy/greenhouse gas emissions: The proposed Wind Farm will help to reduce carbon emissions (Chapter 11), improve Ireland's security of energy supply and reduce greenhouse gas emissions and other air pollutants. Long term moderate positive impact predicted.
Decommissioning	• Similar impacts to those occurring during construction, but the effects are anticipated to be less.
Cumulative	**The Proposed Project:** • In combination effects during construction from positive effects on employment and investment (as above). No significant in combination residential amenity effects. • Positive in combination effects from facilitating reduction in carbon emissions and security in energy supply (as above). • No decommissioning in combination effects. **Other Developments:** • Long term positive moderate cumulative employment and investment effects on the local area predicted for construction and operation phases. No significant cumulative impact on land use and a short term imperceptible negative cumulative effect on property values. • Shadow Flicker: 25 no. properties are located within the potential to cumulative shadow flicker zone. Of these, 9 properties (excludes Participating Properties) have the potential to experience cumulative shadow flicker effects as a result of the proposed Wind Farm in combination with Bilboa Wind Farm (H17) or White Hills Wind Farm (H30, H44, H50, H51, H64, H72, H90, H103). Potential moderate, negative and long term effect.

9.6.5. Mitigation

- Mitigation measures detailed in Appendix 4-4 Construction Environmental Management Plan. Health and Safety Plan covering the construction process, identification of hazards and assessment of risks, warning signs, appointment of Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) required.
- Mitigation measures outlined in Chapter 8 Land Soil and Geology, Chapter 9 Water, Chapter 10 Air Quality, Chapter 12 Noise and Vibration, Chapter 14 Landscape and Visual, Chapter 15 Material Assets, Chapter 16 Major accidents and Natural Disasters and Chapter 18 Schedule of Mitigation and Monitoring Measures referenced.
- Operational Health and Safety Plan, restricted access to turbines, erection of operational safety signs, and regular maintenance.
- Replanting of hedgerow, shrub and treelines as per Appendix 6-4 Biodiversity Management and Enhancement Plan.
- Shadow flicker: Site specific screening measures to be implemented in the event of an occurrence of shadow flicker exceeding the 30 minutes per day threshold (the 2006 Guidelines). Wind turbines will be fitted with shadow flicker control units and with turbine control software to prevent the occurrence of shadow flicker at properties.

9.6.6. Residual Effects

Construction (including decommissioning): No significant residual effects predicted. Predicted residual effects are none, short term or permanent (land use), and in the range of none, imperceptible, slight and slight to moderate, negative and indirect or direct. In terms of employment and investment, short term moderate positive indirect residual effects are predicted.

Operational: No significant residual effects predicted. Predicted residual effects are none or long term, and in the range of imperceptible, slight, negative and indirect or direct, and cumulative. A long term slight to moderate positive residual indirect cumulative effect on employment and investment, and a long term moderate positive impact on renewable energy production and reduction in greenhouse emissions are predicted.

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

Population growth

Observations note that the CDP in Map 14.1 identifies population growth for the area. I have reviewed Map 14.1, and it identifies population changes which took place between 2011-2016 within the Electoral Districts. Section 5.3.2 of the EIAR identifies population trends based on census data for the Ridge and Rathorman District Electoral Divisions (DEDs) which the proposed Wind Farm is identified to lie solely within (a population study area of 37km^2). The population for the study area is shown to have decreased by 1% between 2016 and 2022. I am satisfied that up to date and relevant baseline data informs the population study area in the EIAR.

Tourism Assets within the Immediate Area

The Commission will note that the Planner's report outlined that the designated scenic routes and viewpoints were not given due consideration as a tourism asset. The applicant's Appeal Submission confirms that there are no identified tourist attractions pertaining specifically for the site itself, and the EIAR Chapter 5 outlines that there are no amenity walkways within the site. I note the scenic routes and scenic views of Co. Carlow are not referred to in the CDP's Tourism and Recreation Chapter or in the of the CDP, nor is the Killeshin Hills specifically referred to in the County Carlow Tourism Strategy and Action Plan 2020-2025. I further note the existing operational and permitted wind farm baseline within the surrounding area. I, therefore, concur with the conclusion of the EIAR that the proposed Wind Farm would not have an adverse impact on tourism infrastructure. I have considered the visual effects on scenic amenities in Section 9.15 below.

Shadow Flicker

Having reviewed the shadow flicker assessment, I note there are potential inconsistencies in the conclusion of no residual shadow flicker effects (including cumulative) and the mitigation strategy proposed. Section 5.8.6 presenting the shadow flicker modelling results sets out that the developer will commit to mitigation measures that will ensure that there are no occurrences of shadow flicker for any property within the 1.55km study area (excluding 6 derelict properties and 13

Participating Properties). In this regard, it should be noted that the cumulative modelling result in Table 5-10 assumes zero shadow flicker effects post-mitigation as a result of the proposed Wind Farm. The mitigation strategy (Section 5.10.3.10) introduces the 30 minutes per day threshold (as per the 2006 Guidelines) for screening mitigation measures and confirms the ability to comply with zero shadow flicker if the requirements of the Draft 2019 Guidelines should these be adopted during the planning application process. The Commission will note that the Draft 2019 Guidelines are still draft, however, it is now considered best practice to implement a zero shadow flicker mitigation strategy for wind farms in Ireland. Given the inconsistencies highlighted, I recommend the installation and the implementation of the turbine control software to ensure no shadow flicker effects is conditioned and I have set out a suitable condition for consideration in my recommendation.

9.6.8. Conclusions: Direct and Indirect Effects.

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential effects on population and human health as a result of the proposed Wind Farm would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. I am therefore, satisfied that the proposed Wind Farm would not have any unacceptable direct, indirect or cumulative effects on the population and human health.

9.7. Biodiversity

9.7.1. Issues Raised

The Planner's report in their review of EIAR Chapter 6, supported by appointed external consultant's (Blackstaff Ecology), notes minor details to be clarified including field mapping application used, crepuscular newt surveys, dedicated lizard surveys, and crepuscular bat survey of structures along proposed grid connection route. In this regard, I have addressed the matter of field survey team, experience in Section 9.4 above. The Commission will note no concerns were raised by the Council's Environmental Department.

Observations to the appeal raised concerns regarding impact on wildlife including impact from forestry felling, little information on habitats that surrounds the site, wetland within the site, incomplete bat surveys and impact on the River Barrow and River Nore SAC and potential for significant effects to riverine species and habitats. Concerns raised relating to birds (Section 9.8), peat slide risk (Section 9.9) and water quality (Section 9.10) are addressed in relevant sections below, and not repeated herein.

I have carried out an assessment of the potential impact on European sites in Section 10.0 Appropriate Assessment and Appendices 1 and 2 of this report, and I have not repeated such herein.

9.7.2. Context

Biodiversity is addressed in Chapter 6 and Appendices 6-1 to 6-4 of the EIAR. Birds is addressed separately in Chapter 7 and Water is addressed in Chapter 9 of the EIAR, see Sections 9.8 and 9.10 below, respectively. A NIS was submitted with the application, and as noted, I have addressed the issues relating to Appropriate Assessment (AA) in Section 10.0 below and Appendix 1 and Appendix 2 of this Inspector's Report.

9.7.3. Baseline

Ecological surveys were carried out between July 2022 and October 2023, and an overview of surveys and dates are provided in EIAR Table 6-2 and detail of survey methodology and scope are provided in Section 6.2.3 as well as in Botanical Report (Appendix 6-1), Bat Report (Appendix 6-2), and Aquatic Report (Appendix 6-3). The applicant did not identify any significant limitations in the scope, scale or context of the assessment. The desk study carried out is described in EIAR Section 6.4.1.

Protected Sites: European sites within the zone of influence of the proposed development are the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233). Nationally designated sites within the likely zone of influence include Mothel Church, Coolcullen pNHA (000408). This is known to support a summer roost for Natterer's bat and is located 3.7km northwest of the nearest proposed turbine.

Habitats: No Annex I habitats and no Flora (protection) Order or Irish Red Data Books listed botanical species were recorded. No invasive species listed on the Third Schedule were recorded. The dominant habitats were Conifer plantation (WD4) and recently felled woodlands (WS5) as well as agricultural fields characterised as Improved agricultural grassland (GA1) with areas of Wet grassland (GS4). The proposed development is predominately located within these highly modified habitats. Scrub (WS1) habitats were noted to be predominantly associated with previously felled wood, no infrastructure located within this habitat. Habitats considered to be **Key Ecological Receptors (KER)** include the linear habitats predominately recorded along field boundaries such as Hedgerows (WL1), Stonewalls (BL1), Earth banks (BL2) and Treelines (WL2). The aquatic habitats recorded, Drainage Ditches (FW4) and Eroding Upland Rivers/Streams (FW1), are also considered KERs. Identified drains/ditches were mainly man made and associated with forestry and noted to lack any aquatic vegetation. There are three westward flowing watercourses, Seskinrea Stream and two unnamed streams, which have all historically been modified. Existing tracks and buildings within the site were classed as Buildings and artificial surfaces (BL3). There are no KER habitat identified along the proposed grid connection route (Co. Carlow) which will be via underground cabling along onsite tracks and the local public road (L30372/L3037/L30371). There is one existing bridge watercourse crossing on L30372 (Bridge 7), unnamed stream which will be crossed via HDD, and the launch area for the HDD crossing of Bridge 6 (Phillip's Bridge), Coolcullen River, is located within Co. Carlow, no instream works is required.

Fauna: Signs of **badger** (KER) were recorded within the site, within conifer plantation (south of T01) and where existing access track crosses unnamed stream (south of T06). No badger setts were recorded within the site. No signs of badgers recorded along the proposed grid connection route. **Otter** (KER)is a qualifying interest of the River Barrow and River Nore SAC. No otter signs were recorded within the site or along the proposed grid connection route. Within the wider study area, otter spraint sites were identified downstream on the Dinin River (Appendix 6-3). No breeding (holts) or resting (couch) were recorded. **Pine martin** (KER) and **red squirrel** (KER) were sighted once or twice within the site, and in regards other fauna, Irish hare and fox were also recorded. The dedicated larval web survey

recorded three **marsh fritillary** larva webs within the site, and T07 was relocated to avoid these. One sighting of **common frog** and none of **smooth newt** and **common lizard** (KER) recorded. Only smaller ponds/ditches identified within the site which may provide some breeding space for common frog and smooth newt. Scrub and in particular, stone walls within the site could provide suitable hibernation sites for common lizard.

Bat (KER) species used the site consistently for commuting and foraging, no roosting bats were identified and limited roosting potential recorded. The most frequent species recorded were common pipistrelles followed by Soprano pipistrelles then Leisler's bat and Myotis spp. Brown long-eared and Nathusius' pipistrelles were also recorded but in lower numbers. Within the site, two structures were assessed as having Low and Negligible suitability for roosting bats and none of the trees presented features with potential for roosting. Black Bridge (turbine delivery route) was assessed as having High suitability for roosting bats.

Aquatic and Fishery Species (KER): Streams within the site or immediately adjacent to the site were typically small and modified channels. These were not recorded to be of fisheries value, no suitability for white-clawed crayfish and no freshwater pearl mussel were recorded (Survey sites A1, A2, A3, A4 and A5). There was an absence of aquatic habitats of any high conservation value and the water quality status was poor for all except Site A3 which was dry and A4 which was of moderate quality (tentative). Further downstream, salmonids and Atlantic salmon were recorded on the Seskinrea Steam (A6), Coolcullen River (Philip's Bridge, A7) and the Dinin River (Black Bridge, A9) and downstream on the Dinin River (A10, A11 and A12). Lamprey ammocoetes were only recorded on Oldleighlin Stream (C3). Widespread suitability for European eel was noted but only recorded in low densities on downstream on Dinin River (A11 & A12). No white-clawed crayfish were recorded during surveys, but white-clawed crayfish was detected from eDNA surveys downstream on the Dinin River (A10) as well as a positive test for Crayfish plague (Aphanomyces astaci) at A12. No rare or protected macro-invertebrate species or macrophytes/aquatic bryophytes were recorded.

The proposed development is located within the Nore Lower Margaritifera catchment and the Barrow Margaritifera catchment, both of which are classified as 'Catchments with previous records of Margaritifera, but current status unknown'. The site is

hydrologically connected to the Nore Lower Margaritifera catchment via Seskinrea and the two unnamed tributaries, however it is not linked to any known freshwater pearl mussel point records. No **freshwater pearl mussel** eDNA was detected during surveys, and results considered as evidence of the species absence within the survey area.

9.7.4. Likely Potential Effects

Table 9.3: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• Current forestry and agricultural land use practice and management likely to continue, and other habitats likely to remain in similar conditions.
Construction	**Habitats:** • Loss of 2.9 ha of wet grassland (GS4)/improved agricultural grassland (GA1) and 19ha conifer plantation (WD4)/recently felled woodland (WS5), assessed as being of Local importance (Lower Value), common and widespread, and not significant. No impact on scrub (WS1). • Loss of linear habitat including 82m of treelines (WL2) and 364m of hedgerows (WL1) and associated stone walls (BL1). Widespread and common habitat in the area and removal would not cause significant fragmentation of habitat connectivity. Significant at the local geographical scale. **Aquatic receptors:** • Direct effects: Two clear span watercourse crossings proposed including removal of existing degraded culvert within site and HDD crossings along grid connection route. Given baseline and/or no instream works proposed, no potential for direct impact on aquatic reporters. • Indirect effects: No groundwater level impacts are predicted. Risk of pollutants and sediment laden surface water run-off and potential to result in significant indirect effects on identified aquatic habitat, species and receptors downstream. **Fauna:** • Badger: No significant loss/fragmentation of habitat. If sets are established, potential for significant disturbance/mortality effect at local geographical scale. • Otter: Habitat destruction, barrier effect, disturbance and mortality effects are not significant. Potential indirect effects in the form of habitat degradation/loss of prey resources through water pollution considered significant (local geographical scale). • Red Squirrel/pine martin: No significant loss/fragmentation of habitat. If breeding sites are established, potential for significant disturbance/mortality effect at local geographical scale.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• Common lizard: No significant loss/fragmentation of habitat. Potential direct impact (risk of mortality) if removal of stone walls is carried out in the winter months, significant at local geographical scale. • Bats: No potential for significant effect with regard to loss of, or damage to, roosting habitat. No significant effect with regard to loss of commuting and foraging habitat. No significant displacement of individuals or populations is anticipated. Potential significant negative disturbance effect during strengthening works at Black Bridge (local geographical scale). • Mothel Church, Coolcullen pNHA [000408]: As above, no significant loss of commuting/foraging habitats anticipated in terms of the Natterer's bat population for which this site is designated.
Operation	**Aquatic receptors:** • Risk of sediment laden surface water run-off during storm rainfall events and potential to result in significant indirect effects on identified aquatic habitat, species and receptors downstream. **Fauna:** • Badger, otter, pine martin and red squirrel: No potential for significant negative effects. • Reptiles: No potential for significant negative effects. • Bats: No significant collision related effects anticipated on Myotis spp. and brown long-eared bats, both low collision risk species. Collison risk for Leisler's bat considered medium and low for Nathusius' pipistrelle, both high risk species. Potential long term negative effects for Common and Soprano Pipistrelles, high collision risk species and high level of activity. Significant effects at a local geographical level. • Mothel Church, Coolcullen pNHA [000408]: Likely that Natterer's from this nursery make use of the site. As above, low numbers of Myotis spp. recorded and collision risk considered low and no significant loss of commuting/foraging habitats.
Decommissioning	• No additional habitat loss. • Potential impacts on water quality and associated aquatic fauna and other terrestrial fauna as during construction.
Cumulative	**The Proposed Project:** • Construction Habitats: The combined loss of approximately 622m of linear habitats for the Proposed Project. Significant at local geographical scale. BMEP (Appendix 6-4) details the planting of additional linear habitats, up to 3,350m for the Proposed Project. Aquatic receptors: No potential for direct impacts on any aquatic receptors. Potential indirect effects, as above. Otter: Potential indirect effects through water quality. Bats: Black Bridge, as above. • Operational/Decommissioning: No potential for in combination effects with proposed Grid Connection Route and Turbine Delivery Route.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	Other Developments: • Taken account of the lack of residual effects for the Proposed Project, no connection that could potentially result in additional or cumulative effects identified.

9.7.5. Mitigation

- Pre-construction surveys for badger, and any sets within 50m of proposed infrastructure will be monitored and exclusion zones set up if required.
- Pre-construction surveys for pine martin and red squirrel for felling blocks and 50m buffer. If active breeding sites identified, then felling works will avoid main breeding season (February-September).
- Works to remove stone walls to be undertaken March to September, or by hand if required to be taken down in core winter period (October – February) and supervised by an ecologist to ensure safe relocation of any lizards (if found).
- Detailed control measures relating to the protection of surface water during construction as per Chapter 9 Water, Section 9.5.2 including hydrological buffer zones, and detailed control measures for protection of surface water during watercourse crossings. HDD works to be carried out over a dry period between July and September (as required by IFI for in-stream works) to avoid the salmon spawning season and to have more favourable (dryer) ground conditions.
- Drainage maintenance plan detailing protection of water quality protection during construction.
- Linear planting proposed, up to 3,350m, and pine martin and red squirrel boxes as per BEMP Appendix 6-4 and reinstatement of stone walls where possible.
- Daily monitoring of excavations by the Environmental Clerk of Works, with support by the project ecologist and hydrologist as per the CEMP (Appendix 4-4).
- Best practice construction best practice will be employed to minimise general noise and disturbance potential including use of lights (CEMP, Appendix 4-4).

- Bats mitigation measures as per Appendix 6-2 including felling buffers, blade feathering, turbine curtailment, three years operational monitoring and adaptive mitigation strategy.
- Works at Black Bridge will be undertaken to avoid deep hibernation period for bats (December to February). Pre-commencement bat activity survey will be carried out in order to reassess the baseline environment, and a bat derogation licence will be obtained from the NPWS if a bat roost is identified.
- Installation of operational phase drainage system including utilising existing forestry drainage to capture and attenuate all drainage water from the proposed development (Appendix 9-1).
- Felling buffers around turbines, blade feathering, curtailment, operational monitoring and adaptive mitigation strategy (Appendix 6-2).

9.7.6. Residual Effects

- Habitats: No potential for significant residual effects as a result of the proposed Wind Farm, or in combination with the Proposed Project. Additional linear habitats planting for the Proposed Project resulting in a net gain.
- Aquatic Receptors: No significant residual effects on aquatic habitats and species predicted as a result of the proposed Wind Farm, or in combination with the Proposed Project.
- Bats: No significant residual effects on bats as a result of loss or damage to commuting/foraging habitat, loss of, or damage to, roosts, displacement or collision and barotrauma are anticipated. Linear planting will provide additional foraging and commuting habitat.
- Other Fauna: No significant negative residual effects are anticipated as a result of the proposed Wind Farm, or in combination with the Proposed Project.

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

The Commission will note the minor clarifications noted by the planning authority following the review of Blackstaff Ecology of EIAR Chapter 6. The applicant's Appeal Submission in response to the clarifications sought outlines that the mapping app used was ArcGIS Field Maps and that multi-disciplinary walkover surveys' area is as per Section 6.2.3.1, and detail badger survey as per Section 6.5.2.1. The applicant's

Appeal Submission refers to Section 6.5.2.7 in relation to amphibians confirming no common lizard or smooth newt observations made and one incidental recorded of common frog. Crepuscular newt survey, eDNA samples or dedicated common lizard surveys were not required as no significant suitable breeding habitat for amphibian species was identified, and the Habitat Suitability Index (HIS) is a UK survey methodology specifically for evaluating the suitability of ponds for great crested newt and is not a survey methodology for smooth newt in Ireland. Mitigation measures detailed in Section 6.6.2.2.4 in relation to the removal of stone are also referred to by the applicant.

I note there is no reference in EIAR Table 6-2 for crepuscular bat surveys being carried out for any of the grid connection bridges and EIAR Section 6.5.2.6 refers an assessment of bats roosting potential of five bridges along the route. The assessment in EIAR Table 6-19 outlines that no structural works are proposed to any of these bridges as the crossing methodology is by HDD. The applicant confirms the endoscope survey carried out at Black Bridge and recommended mitigation measures (Table 6-19) where surface strengthening works are proposed. In regard to concerns raised by observations regarding bat surveys above canopy, trapping of bats to verifying species and blade sweep, I am satisfied that the surveys carried out were sufficiently comprehensive and in accordance with NatureScot 2021 methodology and as set out in the EIAR, that tree felling proposed provides for the required buffer distance for the protection of bats, from the turbines to the canopy of the nearest habitat feature (precautionary approach assumed largest rotor diameter and maximum tip height).

Furthermore, and in response to concerns raised by observers, I am satisfied that the potential impacts on habitat and species including the impacts of tree felling have been comprehensively assessed in the EIAR as summarised above. The Commission will also note that the Council, supported by appointed external consultant's (Blackstaff Ecology), considered that the Biodiversity chapter of the EIAR presented a comprehensive and fully supported assessment. No concerns have been raised by prescribed bodies in relation to Biodiversity.

9.7.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential effects on biodiversity (including habitats and species) as a result of the proposed development would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. I am therefore, satisfied that the proposed Wind Farm would not have any unacceptable direct, indirect or cumulative effects on the biodiversity.

9.8. Birds

9.8.1. Issues Raised

The Planner's Report in their review of EIAR Chapter 7, supported by appointed external consultant's (Blackstaff Ecology), identifies clarifications relating to breeding bird survey scope, spread of survey times during the day, target species, I-WeBS sites, ZoI, presentation of red and amber listed passerines species. Observations to the appeal raised concerns regarding impact on birds including impact from forestry felling, and impact from low blade sweep.

9.8.2. Context

Birds is addressed in Chapter 7 and Appendices 7-1 to 7-7 of the EIAR. Biodiversity is addressed in Chapter 6 and Water is addressed in Chapter 9 of the EIAR.

A NIS was submitted with the application, and I have addressed the issues relating to Appropriate Assessment (AA) in Section 10.0 below and Appendix 1 and Appendix 2 of this Inspector's Report.

9.8.3. Baseline

A site-specific scope for ornithological surveys was devised and field surveys were undertaken in compliance with NatureScot guidance (SNH, 2017) and are described in Section 7.2.4 of the EIAR. Surveys were undertaken between April 2020 and May 2022, consisting of two breeding seasons (April to September) and two non-breeding seasons (October to March). A survey visit was also carried out September 2023 to

confirm habitats remained as surveyed. No significant limitations noted, breeding walkover and breeding raptor survey not completed April 2020 due to COVID-19 outbreak.

The proposed Wind Farm is located 15.7km from the River Nore SPA and is hydrologically linked to the SPA. The nearest records of Kingfisher relate to the River Barrow, between 5.2km and 8.3km from the site. No other designated sites of ornithological significance are located within the potential ZoI. The site is not located within an area identified as sensitive to birds and is over 40km from the nearest area of high sensitivity, the Slieve Bloom Mountains. The nearest Irish Wetland Bird Survey site, the River Barrow (Goresbridge-Maganey Bridge) is approximately 5km to the east of the site.

Target species within the potential ZoI of the proposed Wind Farm and inclusion/exclusion as Key Ornithological Receptors (KOR):

- Three Annex I species Golden Plover, Hen Harrier and Peregrine Falcon. Golden Plover was regularly recorded in flight during passage and winter seasons within or within 500m of the site and infrequently during breeding season (wintering population assigned County Importance, KOR). Hen harrier was recorded once within the site during winter season and once within 500m of the site during breading season (No Ecological Importance). Peregrine was recorded once travelling within 500m of the site during breeding seasons and probable breeding territory 3.6km from the site (No Ecological Importance).
- Four red list target species Kestrel, Lapwing, Snipe and Woodcock. The closest confirmed breeding territory for Kestrel was 3.5km from the site, and kestrel was regularly recorded hunting within site and area (all season assigned County Importance, KOR). No breeding territories identified for Lapwing and three in flight observations within 500m of the site during each breeding season and none during winter season (No Ecological Importance). Regular winter observations of Snipe within 500m of the site and no observations during breeding bird season (wintering population assigned County Importance, KOR). Minimum three breeding areas for Woodcock identified at, or within 500m, of the site and the species recorded frequently during breeding season (breeding population assigned County Importance, KOR).

- Three raptors Buzzard, Long-eared owl and Sparrowhawk. Buzzard and sparrowhawk (both Green listed) probable breeding territories and regular occurring population recorded, and both assigned Local Importance (Higher Value) for all seasons and KOR. The only observation of long-eared owl was at a distance greater than 1km from the site (No Ecological Importance).
- Passerines (Red listed): Generally considered that passerines bird species are not significantly impacted by wind farms and commercial forestry is of limited ecological value species recorded in the area of the site during surveys (grey wagtail, meadow pipit, redwing and swift).

Target species including king fisher, little egret, whooper swan and curlew were observed at a distance greater than 4km of the site and not within the ZoI of the proposed Wind Farm.

In terms of cumulative wind farm baseline, existing and permitted wind farms within 25km of the proposed Wind Farm are identified in Table 7-12. I have addressed any relevant changes to the cumulative baseline in Section 8.5.

9.8.4. Likely Potential Effects

Table 9.4: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• Current forestry and agricultural land use practice and management likely to continue, and the bird community is likely to remain similar to baseline conditions.
Construction	Direct habitat loss: Habitat not considered unique for the area, extensive availability and small development footprint. Effects long term slight (very low to low) negative and **not significant**. • Golden plover (wintering): Habitat within site not considered important for foraging and roosting. Negligible magnitude of effect. • Kestrel (all seasons): Minimal loss of suitable breeding habitat and foraging habitat. Low magnitude of effect. • Snipe (wintering): Low number of observations within the site and were observed utilising recently felled or newly planted habitat. Low magnitude of effect. • Woodcock (breeding): Identified breeding territories overlap with commercial forestry within the site and proposed Wind Farm footprint. Direct habitat loss will be minimal, but a measurable reduction within the site. Low magnitude of effect. • Buzzard (all seasons): Identified breeding territory, approximately 300m from T06 and no proposed development footprint overlap.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	Majority of suitable breeding habitat outside development footprint and loss of foraging habitat not significant. Low magnitude of effect. • Sparrowhawk (all seasons): Frequently recorded within the site and one probably breeding but no footprint overlap. Low magnitude of effect. Disturbance: Habitat not considered unique for the area. Effect long term slight (very low to low) negative and **not significant** effects. • Golden Plover (wintering): Regular usage of the habitat within 500m of the site not demonstrated. Negligible magnitude of effect. • Kestrel (all seasons): Identified breeding territories significantly beyond disturbance buffer zones, and similar activity recorded across areas of similar habitat. Low magnitude of effect. • Snipe (wintering): Low use of the site recorded. More frequent use recorded of agricultural grassland to the east of the site, more than 400m from construction works. Low magnitude of effect. • Woodcock (breeding): Breeding territories within the site. Extensive areas of breeding and foraging habitat will remain post construction. Medium magnitude of effect. • Buzzard (all seasons): Identified breeding territory within the site and species frequently recorded. Highest breeding density recorded outside the site. Medium magnitude of effect. • Sparrowhawk (all seasons): Breeding recorded within the site and construction activity adjacent to potential nest site. Medium magnitude of effect.
Operation	Displacement/barrier effect: Habitat not considered unique for the area. Effect long term slight (very low to low) negative and **not significant** effects. • Golden plover (wintering): Regular usage of the habitat within 500m of the site not demonstrated. Negligible magnitude of the effect. • Kestrel (all seasons): Suitable foraging habitat exists and will remain in the wider area. Low magnitude of the effect. • Snipe (wintering): No breeding activity recorded, and non-breeding activity assumed to be less at risk. Low magnitude of effect. • Woodcock (breeding): Extensive breeding and foraging habitat within the wider area. Medium magnitude of effect. • Buzzard (all seasons): Reduction in the frequency of commuting and foraging within 500m of the proposed wind turbines. Suitable habitat within the wider area and higher density of breeding recorded 2.5-4.5km south of the site. Medium magnitude of effect. • Sparrowhawk: Reduction in breeding density, but suitable habitat available within wider area. Medium magnitude of effect. Collision risk: All species recorded flying in the potential collision risk zone. Effect long term imperceptible to slight (very low to low) negative and **not significant** effects. • Golden Plover: Activity between the two winter surveys varied considerably. An increase in annual mortality of county population calculated by 13.10-26.20% (42.978-85.956 collisions), considered an over-estimated taking account inflated avoidance rate, unsuitable

Project Phase	Potential Direct, Indirect and Cumulative Effects
	habitat and underestimate of county population. Medium magnitude of effect. • Kestrel (all seasons): An increase in annual mortality of county population calculated by 0.99% (1.603 collisions). Negligible magnitude of effect. • Snipe (wintering): An increase in annual mortality of county population calculated by 0.15% (0.188 collisions). Negligible magnitude of effect. • Woodcock (breeding): A single bird collision predicted over the operational lifespan, 35 years. Negligible magnitude of the effect. • Buzzard (all seasons): Favourable conservation status. Loss of 1.626 birds per year from local population. Low magnitude of the effect. • Sparrowhawk: Favourable conservation status. Loss of 0.335 birds per year from local population. Negligible magnitude of effect.
Decommissioning	• Habitat: none. • Disturbance: as construction above.
Cumulative	**The Proposed Project:** • Negligible magnitude of effect on KORs as a result of proposed Grid Connection Route and Turbine Delivery Route during construction. No significant in combination construction effects, and no in combination operational and decommissioning effects identified. **Other Developments:** • Of the seven KORs, four are of county importance (golden plover, kestrel, snipe and woodcock) and two are of local importance (buzzard and sparrowhawk). • Habitat: Loss of commercial forestry/farmland, no significant residual cumulative effects predicted. • Displacement: Habitat not scarce locally or within the wider area and considering separation distance, no significant residual cumulative effects predicted. • Collision risk: Zero to insignificant to low numbers of additional collisions predicted when including wind farms within 25km. No significant residual cumulative effects predicted.

9.8.5. Mitigation

Mitigation measures pertinent to birds and based on industry best practice are detailed within the CEMP (Appendix 4-4), and include:

- Appointment of Ecological Clerk of Works and Project Ecologist and duties.
- Pre-construction walkover surveys will be undertaken prior to the initiation of works, 500m radius on development footprint.

- Works, if possible, will commence outside of breeding bird season (1st March to 31st August).
- The removal of woody vegetation will be undertaken in full compliance with Section 40 of the Wildlife Act 1976 – 2022.
- Measures to minimise disturbance of birds during construction and for water protection.
- Measures in the event winter roosting or breeding activity of birds of high conservation concern is identified.
- Post-construction, a detailed Bird Monitoring Programme (Appendix 7-6).
- Decommissioning, prior to works monitoring surveys.

9.8.6. Residual Effects

No potential significant residual effects on any of the identified KORs with regard to direct habitat loss, disturbance/displacement or collision mortality as a result of the proposed development individually, or in combination with the Proposed Project, or cumulatively with other developments.

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

The Commission will note the clarifications outlined by the planning authority relating to limitations of surveys and inconsistencies with regards to survey methodologies. The applicant's Appeal Submission has responded to clarifications raised.

Breeding bird surveys: The planning authority has noted that the breeding bird surveys did not extend across the entire site and that the VP watches are carried out at the appropriate time of year and are spread across the relevant seasons as is required by the SNH methodology, there is a relative lack of survey data from early to late in the day during the breeding bird season. The applicant's Appeal Submission makes reference to EIAR Section 7.2.4.2.2 which outlines that breeding walkover transects were selected to ensure all areas of suitable breeding/foraging habitat were approach within 100m, where access allowed. Furthermore, breeding walkover survey typically targeted breeding waders, and that commercial forestry is not considered a suitable breeding habitat for these species, and that areas not covered were not accessible. The applicant considers the cumulative effort of breeding bird surveys completed present a comprehensive coverage of the site, and

as such, resulting in a complete suite of breeding surveys. The applicant has confirmed that VP surveys carried out during migratory periods and winter season (between September and May inclusive) included dawn/dusk period given the potential for activity outside daylight hours. The applicant's Appeal Submission refers to Appendix 7-2 for further details, and notes that surveys took place throughout all hours of the day during the two years of bird surveys. I am satisfied that the VP surveys have good coverage for the targeted species during breeding bird season.

I consider the survey methodology and the scope of the bird survey work, having regard to targeted species, to provide an acceptable and comprehensive coverage of the site. I am satisfied that the proposed Wind Farm will not result in significant effects on the ornithological receptors.

Zone of Influence/Target species: I am satisfied with the applicant's clarification in the Appeal Submission relating to Zone of Influence and confirmation of target species listed in Table 7-9 to 7-11 and the identification of target species as per Section 7.2.3. I also note the applicant's clarification relating to Appendix 7-1 and Table 7-1-1, and clarifications relating to non-target species and passerine species. I accept the applicant's clarification that Appendix 7-6 details the Monitoring Programme for the identified Key Ornithological Receptors within Chapter 7, and that this is not relevant to the interpretation of EIAR Figure 7-6 to 7-8 and Figure 7-11 which corresponds with Section 7.2.4.2 of Chapter 7, and that target species for the proposed Wind Farm are detailed in Section 7.3.6.

I-WeBS: I accept the applicant's clarification on I-WeBS site coverage and reference to Section 7.3.4 of Chapter 7 where a footnote is included outlining limitations of using the data.

Blade sweep: Observers have raised concerns regarding the proximity of the sweep area to ground level in terms of impact on birds. In this regard, I am satisfied that a robust Collision Risk Assessment has been carried out and that the planning authority, with the support of Blackstaff Ecology, in their review of EIAR Chapter 7 raised not concerns relating to the Collision Risk Assessment (Appendix 7-5). I further note three models were run covering the full range of turbine dimensions, from the lowest swept height ranging from 25m to 30.5m.

9.8.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential effects on ornithology as a result of the proposed Wind Farm would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. I am therefore, satisfied that the proposed Wind Farm would not have any unacceptable direct, indirect or cumulative effects on the ornithology.

9.9. Land Soil and Geology

9.9.1. Issues Raised

The Commission will note that the planning authority considers that further ground investigations including boreholes for turbine foundations are required at consent stage, and has queried whether an alternative location should be looked at for T05 to avoid mitigation measures with regard to peat stability. The lack of a cumulative impact assessment in Chapter 8 has also been noted.

Observations to the appeal have raised concerns regarding risk of peat slide and site investigations. Concerns relating to the volume of peat to be excavated have been address in Section 9.12 below and not repeated herein. Furthermore, concerns raised by observations relating to technical competencies have been addressed in Section 9.4 above and not repeated it herein.

Conditions recommended by Carlow Council's Environment Department and HSE are considered in Section 8.7 above. I have, therefore, not considered them further herein.

9.9.2. Context

Land, Soils and Geology is addressed in Chapter 8 and Appendix 8-1 of the EIAR. Description of the Proposed Project is set out in Chapter 4 and Appendices 4-1 to 4-8. Water is addressed in Chapter 9 of the EIAR.

9.9.3. Baseline

The site is located within the Castlecomer Plateau, it is hilly (elevations ranging from ~230mOD in the west to ~271 in the northeast) and dominated by coniferous forestry and some agricultural pastures.

Peat and Subsoils: The site, including the proposed grid connection route (Carlow), is predominately overlain by acid peat and non-peaty poorly drained mineral soils and is largely underlain by till derived from Namurian sandstones and shales. Areas of blanket peat are mapped within the site and overlap with the proposed development footprint. Acid shallow poorly drained mineral soils and bedrock outcrop or subcrop are mapped in the southeast of the site. Alluvium build-up is noted to the west along Coolcullen River and tributary. Granular subsoil and peat within the site classified as of "Low" importance. Results from peat probing (314 no.), gouge cores, trail pits (8no.), dynamic probes (6 no.) and hand vane test (28 no.) are noted.

- Peat recorded was generally shallow with pockets of deep peat, 96% of all probe locations recorded peat depths less than 1m (40% of all probes recorded no peat). Four probe locations recorded peat depths greater than 2m, the deepest being 2.7m c. 60m from T05.
- Gouge core at proposed infrastructure locations recorded a peat depth range of 0 to 0.45m, and where peat was recorded, this was underlain by grey, firm, dense gravelly clay or silt/clay.
- All trial pit locations encountered topsoil (0.3 to 0.5m thickness), underlain by glacial till (sandy, gravely or silty clay) or coarse sand (T05) or angular sandy silty gravel (T02 and T03). Competent bedrock was not encountered.

Bedrock geological formations which underlain the site include Clay Gall Sandstone (T01, T04, T06, T07, met mast, temporary construction compound), Bregaun Sandstone Formation (T02, T03 and T05), Moyadd Coal Formation (on-site substation, BESS, northern construction compound) and Coolbaun Formation (part of grid connection route). A fault line is mapped in a north/northwest to south/southeast orientation (c.120m east of T06 and c.230m west of T01) and a second one, is mapped c. 500m southwest of T07 (northwest to southeast orientation). No bedrock outcrop is mapped within the site. Bedrock within the site classified as of "Medium" importance

No active or historic quarries/pits are mapped within the site, no evidence of historic extraction/borrow pits were recorded during site surveys, and no mineral localities are recorded, and crushed rock aggregate potential within the site is predominately very low to low. No contamination concerns within the site have been identified. There are no recorded geological heritage sites within the site.

9.9.4. Likely Potential Effects

Table 9.5: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• Will continue to function as it does at present, with no changes made to the current land-use. Opportunity to facilitate renewable energy generation lost.
Construction	• Land-take: Permanent loss of 7.3ha of forestry/agricultural land, 19ha of forestry to be felled, and local topographical changes from construction works. No permanent land-take from the proposed Grid Connection Route. Negative, direct, imperceptible to slight, likely effect predicted. • Peat, Subsoils and bedrock: Disturbance and relocation of in-situ peat (22,338m3) and subsoil (34,103m3), no loss predicted. Subsoils excavated along the grid connection route will be reinstated back into the trench, with surplus material to be managed in the proposed repository areas and/or disposed of in licenced facility. Negative, slight/moderate, direct, permeant, likely effect predicted. • Contamination: Potential effect on subsoil and bedrock from accidental spillage during refuelling of construction plant, removal of waste is negative, slight, direct, short-term, unlikely. • Erosion of exposed peat/subsoils: High likelihood of occurrence during excavation, landscaping works and tree felling. Potential effect on peat, soil and subsoil is negative, direct, slight, likely. • Peat instability and failure: Quantitative assessment concludes an acceptable margin of safety for all areas. Qualitative analysis concludes a low risk of peat failure for all areas except the spur road to T5 which has a medium probability of peat failure. Negative, significant, direct, permanent likely effect on peat and subsoils.
Operation	• Accidental spillage or use of small amount of granular material during maintenance and emergency repair works. Accidental spills/leaks from onsite equipment. Negative, imperceptible, direct, short term, unlikely effects predicted.
Decommissioning	• Similar to those associated with construction, but of reduced magnitude. Potential reversal of some of the construction impacts by rehabilitating areas. • Grid connection cabling, onsite substation and BESS are permanent.

Project Phase	Potential Direct, Indirect and Cumulative Effects
Cumulative	**The Proposed Project:** • Potential construction effects on land, peat, soils, subsoils, bedrock, predicted to be negative, slight to moderate, direct, unlikely to likely, short-term to permanent and not significant. • No significant indirect or direct operational or decommissioning effects. **Other developments:** • No potential for significant cumulative effects on the land, soils and geology environment given the localised nature of the construction works.

9.9.5. Mitigation

In addition to mitigation measures by design, the following mitigation measures for the construction phase are outlined:

- Appendix 4-4 CEMP.
- Requirements and guidelines measures relating to phasing, shaping, profile, reinstatement, drainage and management of repository areas, all to the agreement/inspection by appointed geotechnical engineer. Peat and Spoil Management Plan included in Appendix 4-2.
- The proposed grid connection route will be constructed in a stepwise manner along its length, minimising the time the trench is open and excavated soils and subsoils are stored, before being reinstated. Grid construction methodology is detailed as per Appendix 4-7.
- Placement of brash/bog mats in forested area to support vehicles on soft ground and ongoing monitoring, machinery will traverse specified off-road routes for felling works.
- Measures relating to refuelling, fuel and oil storage, areas to be bunded, plant inspections, removal of tar material, and an emergency response plan for the construction phase to deal with accidental spillages in CEMP Appendix 4-4.
- Felling works will be completed in accordance with the best practice Forest Service regulation, policies and strategic guidance documents as well as Coillte and DAFM guidance documents.
- Peat control measures as per the Geotechnical and Peat Stability Assessment (Appendix 8-1), including experience/competence of contractor, geotechnical

and/or environmental engineer supervision (daily for T05 spur road), construction timescales, excavation and backfill measures including potential excavation support design and increased exclusion zone, management of excavated materials, drainage measures including pumping from excavations, type and use of machinery, review of conditions during/after heavy rainstorms, and reinstatement.

- HDD construction methodology is detailed as per Appendix 4-7. Geotechnical site investigations will be carried out at the existing bridge watercourse crossing to inform the final bore design and bore depth.

9.9.6. Residual Effects

No significant residual effects on peat, soils, subsoils and bedrock will occur as a result of the proposed development, or in combination with the Proposed Project.

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

Site investigations

The Commission will note that the planning authority has requested that further ground investigation such as borehole for turbine foundations is required at consent stage, and that this reflects observations raised to the appeal which outlines that the site investigations carried out for the EIAR has not confirmed how the turbines will be anchored into solid ground. The applicant's Appeal Submission outlines that the site investigations carried out to date provided full comprehensive coverage of the proposed Wind Farm site.

The EIAR states that the turbine foundation may be formed using piling methods or on competent strata (i.e., bedrock or subsoil of sufficient load bearing capacity) (Section 4.8.9), and both methods are detailed in Appendix 4-4, Section 2.3.9. Site investigations carried out by the applicant are detailed in the EIAR including more intrusive ground investigations to determine the distribution and depth of peat for the proposed development footprint and the conditions of subsoil or bedrock conditions below the peat. The Geotechnical and Peat Stability Assessment Report is included in Appendix 8-1, and I have considered the scope of the peat depth surveys in more detail below, but I am satisfied that the depth of peat where relevant to proposed

infrastructure locations have been sufficiently established and is noted to be predominately shallow. Having regard to this, I am satisfied that there is sufficient understanding of the geology and overlaying subsoil including peat within the site to inform the turbine layout and the assessment of likely significant effects. I am satisfied that further geotechnical investigations, where required, are adequately covered by the work methods outlined in the EIAR including the CEMP..

Peat Slide

The planning authority notes that an alternative location should be looked at for T05 to avoid mitigation measures with regard to peat stability. Observations to the appeal (includes report by Hydro G appended to the submission by RRWA&EG) have raised concerns regarding the removal of 30,000m^3 of peat, risk of peat slide and there are concerns regarding the use of point method and the accuracy of trial pit data.

I have reviewed the submitted the Geotechnical and Peat Stability Assessment (Appendix 8-1) and Chapter 8, and I am satisfied that the potential for the proposed development to generate peat landslide risk has been assessed and that this has been assessed in accordance with recognised guidance, specifically Peat Landslide Hazard and Risk Assessments: Best Practice Guide (Scottish Government, 2017). The applicant has carried out site walkover and peat probing and I note the probing provides a good coverage of the proposed development footprint and has been supplemented by gouge cores, trial pits, heavy dynamic probes and hand shear vanes and laboratory test of soil samples. I am satisfied that the approach taken to ground investigation in peat accords with established technique for informing wind farm developments in Ireland. This does not mean that there are not alternative methods available to determined peat depth and peat properties as indicated by observations, however I am not aware of, nor have any been identified by observations, any recognised best practice guidance which sets out that the approach taken no longer represents an acceptable method for wind farm developments. Furthermore, I am satisfied that the 8 no. trial pit locations and references to same are clearly presented within Appendix 8-1. I note that the concerns relating to trail pits as raised by observations may be in relation to a different wind farm scheme given the references to borrow pit and incorrect developer.

Risk assessment has been carried out by the applicant for infrastructure locations where peat depths of 0.5m or greater were recorded (T01, T02, T03, T05, T07 and corresponding spur roads). The infinite slope analysis carried out in the quantitative assessment calculated the Factor of Safety (FoS) to be above the acceptable margin of safety (1.3) for all locations, resulting in a Low probability of peat failure. The applicant also carried out a qualitative assessment considering the likelihood of the occurrence of a peat slide based on a number of factors which affect peat stability. The output of the likelihood analysis was a Low probability of peat slide occurrence at all locations except for the spur road to T05 where the probability was 28% and Medium (25% - 50%) based on a combination of peat depth, lower shear strength, shallow slope and previous dry periods. I note with additional construction mitigation measures the probability is reduced to Low for the spur road to T05. These additional mitigation measures have also been applied to the T05 Blade finger area where the maximum peat depth was recorded, 2.7m (approximately 60m from T05). The consequence of failure was concluded to be Low at all locations. It should be noted that Table 8-10 presenting probability of peat slide occurring based on peat depth is incorrect, but that corresponding Table 15 in Appendix 8-1 is correct.

Having regard to this, I note the recorded average peat depth for all infrastructure locations are less than 0.5m except for T03 and the spur road for T05 which are 0.53m and 0.73m respectively. Deeper pockets of localised peat were recorded along the spur road for T05 (2.1m), at the outer perimeter of the blade tip area for T05 (2.7m), and the outer perimeter of the foundation for T03 (1.3m). I further note from the Peat Stability Risk Register for the spur to T05 and T5 blade finger area in Appendix 8-1 that there was no evidence of soft clay at the base of the peat. The slope angle recorded for infrastructure considered in the risk assessment was shallow at less than 3°. The strength values recorded indicate the presence of well drained peat although higher moisture content was recorded for the spur road to T05 (10kPA-12.5kPa). The trial pit for T05 (TP-T5-01) recorded topsoil to sub 0.3m underlain by grey very fine to coarse sand and light flow of water struck at sub 2.10m. I am satisfied that the majority of the proposed development footprint is located on no peat or on peat depths less than 0.5m, and that areas of deeper peat (>1m) have been largely avoided. Whilst there are pockets of deeper peat record between existing forestry track and the proposed spur road to T05 and the T05, the

proposed layout is shown to avoid these, and additional mitigation measures have been proposed to address locations of increased risk. I am satisfied that the applicant has demonstrated Low risk through slope stability analysis and with the addition of further qualitative analysis of various site conditions, an assessment of consequences, and taking account of mitigation measures to manage risk, has demonstrated that the risk of peat slide for the proposed development is Low. I further note that lessons learnt from previous peat slide events, whilst not directly comparable to the proposed development as outlined in the applicant's Appeal Submission, have been incorporated into the design and construction methodology for the proposed development.

Construction Environmental Management Plan (CEMP)

Concerns raised by observations regarding statements within the CEMP which relates to it being a working document as well as statements relating to the use of existing roads wherever possible, rainfall during summer months and insufficient detail on winter storms, and minimal impacts on watercourses. I have addressed these below.

The applicant has listed in Section 1 of the CEMP, and in the paragraph directly following the one referenced by observations, triggers for amendments of the CEMP including environmental performance, complaints changes in environmental legislation, method statements, but more importantly it states that "any amendments will be in full compliance with the planning consent and mitigation measures as presented in the EIAR, NIS and all other relevant planning documents" and "at all times must meet or exceed the standards and requirements set out in this document." I recognise that this is standard practice for a CEMP, and I am, satisfied, that this working document framework does not seek to facilitate a change in the design of the Proposed Project which would otherwise require planning permission.

I am satisfied that the applicant has presented annual rainfall data in the EIAR, in both Chapter 9 and in Chapter 11. I note that the mitigation measures outlined within the EIAR and in the CEMP in reference to drier months and postponement of works in the event of heavy rainfall relates in particular to works proposed within hydrological buffer zones given the increased risk of water quality impacts. Furthermore, Chapter 9, and as reiterated in the CEMP, sets out that the works

programme for the construction phase will take account of weather forecasts and that works will be planned based on expected weather conditions. I am, therefore, satisfied that the potential impact on weather conditions have been considered and will as such, informs the scheduling of works during the construction phase.

I am satisfied that the CEMP, Section 2.3.8.2, in the reference of existing road network to be used as much as possible, clarifies that existing roads account for 51% of the total length of roads required to access the proposed Wind Farm site. The remainder of roads will be new roads. This is consistent with Chapter 4, Section 4.4.2 which outlines that it is proposed to upgrade approximately 2.8km of existing site roads and tracks, and to construct approximately 2.7km of new access road within the site. I have addressed the routing of traffic is Section 9.16 below. Furthermore, I am also satisfied that it is not proposed to alter the routes of any natural watercourses within the site, 2 no. of crossings are proposed as detailed in Section 3.0 above.

Cumulative

The planning authority notes that cumulative assessment between the proposed Wind Farm and adjacent consented and operational wind farms and proposed grid connection have not been carried out. The applicant's Appeal Submission has responded to the matter referring to the Section 8.6.7 and the localised nature of the construction works and there being no potential for significant land, soil and geology cumulative effects, and that cumulative effects relating to drainage and surface water networks are addressed in Chapter 9, Section 9.5.7. I note the planning authority has not specifically outlined what their potential cumulative concerns are. I am, therefore, satisfied with the applicant's response to the matter.

9.9.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that the applicant provided sufficient survey data to enable assessment of likely effects on the environment. I am satisfied that potential effects on land, soil and geology as a result of the proposed Wind Farm would be avoided, managed and mitigated by the measures which form part of the Proposed Project,

the proposed mitigation measures and through suitable conditions. I am therefore, satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative effects on the land, soil and geology.

9.10. Water

9.10.1. Issues Raised

Kilkenny County Council in their submission outlines details required as regards to proposals for dealing with surface water and ground water from construction works including deliveries and operations. Observations have raised concerns relating to groundwater vulnerability, Water Framework Directive, deficient sediment control measures, the River Barrow and River Nore SAC, impacts on private water supplies and private wells.

Conditions recommended by Carlow Council's Environment Department and the HSE are considered in Section 8.7 above. I have, therefore, not considered them further herein.

I have carried out an assessment of the potential impact on European sites in Section 10.0 Appropriate Assessment and Appendices 1 and 2 of this report, and I have not repeated such herein.

9.10.2. Context

Water is addressed in Chapter 9 and Appendices 9-1 to 9-4 of the EIAR. Description of the Proposed Project is set out in Chapter 4 and Appendices 4-1 to 4-8. Land, soil and geology are addressed in Chapter 8 of the EIAR.

9.10.3. Baseline

Baseline is presented in EIAR Section 9.3.

The majority of the site, including all proposed development infrastructure, is located within the River Nore Water Framework Directive (WFD) **surface water** catchment, and within WFD subcatchment Dinin (South)_010 ("Good") and WFD river sub-basin Dinin (South)_020 ("Good"). Small areas of the site in the east, but none of the proposed infrastructure, are within the River Barrow surface water catchment, and

WFD river sub-basins Rathornan_010 (“Good”) and Old Leighlin Stream_020 (“Moderate”, WFD pressure from agriculture).

The site is drained by several streams including the Seskinrea Stream and a network of manmade drains, and drains towards the west to the Coolcullen River (c. 1km west of the site) which discharges into the River Dinin. Two watercourse crossing are proposed within the site and watercourse crossings along the proposed Grid Connection Route within Co. Carlow. Field hydrochemistry measurements and surface water quality data were taken within surface watercourses draining and directly downstream of the site, results in Table 9-12.

From a review of **flow volumes**, the local hydrological regime is considered to be characterised by high runoff rates. Downstream flow duration curves in the Nore surface water catchment have been estimated showing progressively increase flow volumes downstream reflecting the increased upstream catchment of the respective waterbodies (Figure 9-4).

No records of **flooding** are noted for the site and is not constrained by coastal, fluvial or groundwater flooding. Fluvial flood zones, corresponding with alluvium build up, are noted at the existing watercourse crossings at Coolcullen River and Dinin River (Black Bridge). The risk of flooding is low.

Turbines T02, T03 and T05, the substation and battery storage compound are underlain by a Poor Aquifer, and turbines T01, T04, T06 and T07, the met mast and construction compounds are underlain by Locally important Aquifer. The eastern part of the site is underlain by the Shanragh **Groundwater** Body (GWB) (“Good”) and the western part is underlain by the Castlecomer GWB (“Good”). Groundwater vulnerability rating is considered to be High to Extreme due to the occurrence of shallow bedrock within the site. The underlying bedrock aquifers are of low permeability and with low potential for groundwater dispersion and movement within the aquifer.

Water resources: The closest source protection area is Paulstown Public Water Scheme (PWS), c 3.1km to the south of the site and located within the River Barrow surface water catchment. Several mapped wells have been identified to the west and northwest of the site, and to avoid any gaps in the baseline, it has been assumed that there is a groundwater well source at each local house location identified in

Chapter 15. Drinking Water Protected Areas (DWPAs) located downstream include Dinin (Main Channel)_020, c. 11km distance from the site and further downstream the Nore_160.

Designated sites: The River Barrow and River Nore SAC is located c. 1km west of the proposed wind farm site, and hydrologically connected to the site via the Seskinrea Stream. The SAC is located adjacent to Phillip's Bridge (Grid Connection Route) at Coolcullen River and Black Bridge (Turbine Delivery Route) at Dinin River. The proposed Wind Farm site is located approximately 15.7km northeast of the River Barrow and River Nore SPA, and is hydrologically connected via Seskinrea Stream and Dinin River. No hydrological connection identified to any designated or proposed Natural Heritage Areas (NHA).

9.10.4. Likely Potential Effects

Table 9.6: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• No change anticipated. Opportunity to facilitate renewable energy generation lost.
Construction	• Forestry felling: Exposure of soils and subsoils and release of sediments and nutrients into watercourses. Potential effects on downstream water quality and fish stocks, indirect, negative, significant, temporary, likely effect. • Earthworks: Release of suspended sediments from drainage/seepage water, exposed sediment (stockpiling) and erosion of sediment from emplaced site drainage channels. Negative, significant, indirect, temporary likely effect on rivers and associated water-dependent ecosystems downstream. • Works within hydrological buffer zones: Release of suspended solids to surface waters. Negative, significant, indirect, temporary likely effect downstream watercourses and water-dependent ecosystems. • Excavation dewatering: No significant groundwater dewatering is expected given topographical elevation and hydrogeological setting. Potential for minor groundwater/surface water seepages during turbine base excavations and trench excavations. Additional volume of water and suspended sediments requiring management. Indirect, negative, significant, temporary, unlikely effect surface water quality and water-dependent ecosystems. • Groundwater levels: Small scale temporary dewatering during excavation have the potential to affect local groundwater levels. Negative, indirect, temporary, imperceptible, unlikely effect. • Release of hydrocarbons: From accidental spillage or accumulation of small spills. Negative, indirect, slight, short term, unlikely effect on

Project Phase	Potential Direct, Indirect and Cumulative Effects
	groundwater quality. Indirect, negative, significant, short term, unlikely effect on downstream surface water quality. • Potential release from cement-based products: Entry of cement-based products into surface water represents a risk to the aquatic environment. No batching of wet concrete will occur on site. Sources include washing out of transport and placement machinery activities and placed concrete in turbine bases and foundations. Limited surface areas exposed to concrete and small volumes of groundwater would come in contact with the concrete. Indirect, negative, moderate, short term, likely effect to surface watercourses and water-dependent ecosystems. • Wastewater: Release of effluent from on-site temporary wastewater treatment systems. Negative, significant, indirect, temporary, unlikely effect to surface water quality. Negative, slight, indirect, temporary, unlikely effect on local groundwater quality. • Morphological changes: No instream works required for proposed clear span bridge crossing of Seskinrea stream. Culvert removal and replacement culvert proposed for watercourse crossing of tributary. Rerouting and culverting of manmade forestry drains. Negative, moderate, direct, long-term, likely effect on surface water flows, local stream morphology and surface water quality. • Watercourse crossings (HDD): Bridge crossings along proposed grid connection route in Co. Carlow, no instream works proposed. Potential for runoffs impacting on downstream surface water flows and surface water quality. Unlikely risk of fracture blow out and contamination. Negative, moderate, indirect, temporary, likely effect. • Local groundwater wells / PWS: Potential impact from accidental release of hydrocarbons and cement-based products. No effect on groundwater level/quantities predicted. No impact on downgradient public or group groundwater supply source anticipated. Taking account of hydrological barriers and short groundwater flow paths, predicted effect on downgradient water supply is negative, imperceptible, indirect, long term, unlikely effect on downgradient water supply. • Use of siltbuster: Potential overdosing with chemical agents. Negative, slight, indirect, temporary, unlikely effect on downgradient water quality. • Black Bridge: Indirect, negative, slight, short term, likely effect on downstream surface water quality. • Surface water abstractions: Indirect, negative, imperceptible, short term, likely effect on downgradient water quality. • River Barrow and River Nore SAC and River Nore SPA: Indirect, negative, imperceptible, short term, likely effect on downstream water quality within SAC/SPA. • Impact on SWB/GWB WFD Status: Detailed compliance assessment in Appendix 9-4. Indirect, negative, imperceptible, short term, likely effect.
Operation	• Flood risk: Potentially increase in runoff by 0.2%. Negative, slight, indirect, permanent, moderate probability effect.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• Contamination: Maintenance works. Negative, slight, indirect, temporary, likely effect on downstream surface water quality. • Water supplies: No potential for effects.
Decommissioning	• Potential for reduced magnitude construction effects. Possible for avoidance of effects where works are permanent and reversal of operational effects.
Cumulative	**The Proposed Project:** • No elevated in-combination construction effects for the Proposed Project as a whole predicted. Residual effects on hydrology and hydrogeology receptors are not significant. • No potential for operation/decommissioning in-combination effects. **Other developments**: • The proposals, as mitigated, will ensure no negative forestry felling and construction effects on groundwater quantity and quality and surface water quantity and quality. No significant cumulative effects as a result of the Proposed Project predicted.

9.10.5. Mitigation

- Mitigation by avoidance including buffer zones to watercourses and drains, and by design by integrating and upgrading existing drainage network and tracks.
- Forestry operations will conform to current best practice Forest Service regulations, policies and strategic guidance documents as well as Coillte and DAFM guidance documents.
- Best practice measures and mitigation measures for the proposed development are set out in EIAR Section 9.5, Appendix 4-4 CEMP, Appendix 4-5 Surface Water Management Plan and Appendix 4-7 Grid Connection Construction Methodology. The following are of relevance to the various phases of the proposed development:
- Section 9.5.2.1, 9.5.2.2, 9.5.2.3, 9.5.2.4, protection of surface water quality from potential release of suspended solids and nutrients during forestry felling, earthworks, works within hydrological buffer zones, and excavation dewatering.
- Section 9.5.2.5, specific measures relating to groundwater levels.
- Section 9.5.2.6, protection of surface water quality and local groundwater quality from potential release of hydrocarbons.

- Section 9.5.2.7, protection of surface water quality from potential release of cement-based products including no batching of wet concrete will occur on site.
- Section 9.5.2.8, protection of surface water quality from potential release of wastewater effluent including the use of waste holding tank, and no water or wastewater to be sourced or discharged on site.
- Section 9.5.2.12, protection of surface water quality from the use of siltbuster system.
- Section 9.5.2.9, mitigation measures to be implemented for watercourse crossings within the site. All guidance / mitigation measures required by the OPW and/or the Inland Fisheries Ireland (IFI) is incorporated into the design of the proposed watercourse crossings and Black Bridge. Section 9.5.2.10, specific drainage measures for trenching and crossing works. Section 9.5.2.13, specific measures for direction drilling and associated ground works, and fracture blow out prevention.
- Operational drainage system (Appendix 9-1), maintaining flowpaths, attenuation and release of drainage water within subcatchment and no alteration of the catchment size contributing to each of the main downstream watercourses.

9.10.6. Residual Effects

All residual effects on surface water and groundwater receptors as a result of the construction of the proposed Wind Farm, or in combination with the Proposed Project, will be negative, imperceptible and not significant. The operational residual effect on flood risk will be neutral and not significant and on water quality will be negative, imperceptible and not significant. The implementation of mitigation measures will ensure that there will be no deterioration in water quality of the underlying GWBs or the downstream SWBs and will ensure the protection of downstream European Sites, River Barrow and River Nore SAC and River Nore SPA.

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

Surface Water Runoff

The Commission will note that observations have raised concerns regarding diverting natural drainage, increase in surface water runoff and risk to surface water runoff from deforestation. There are no proposals to divert natural drainage features as outlined within the EIAR. However, rerouting/culverting of existing manmade drains within the proposed Wind Farm site may be required. I note it is proposed to integrate existing and new drainage, and it will not change in the existing flow regime across the site. No direct discharge to any watercourses is proposed. Clean water will bypass works areas and as such, the treatment system will only have to deal with construction water. I note runoff from the developed areas will be routed via settlement ponds, controlling discharge to ensure there is no increase from the existing site. I am satisfied that the proposed drainage design and mitigation and monitoring measures to protect water quality including during tree felling is comprehensively detailed within the EIAR and that the Proposed Project will not result in significant effects on surface water quality or cause the deterioration of water quality downstream. I note no concerns have been raised by the planning authority or by the HSE.

Water Framework Directive

Observations have raised concerns that there is no validation within the application that the Water Framework Directive has been followed and considered, and outline that the site is located in close proximity to Dinin (South)_020, “Good Status” and “Not at Risk”, and the headwaters of the River Barrow and River Nore SAC and that this is not presented or assessed for impact correctly.

As set out above, the applicant has submitted a WFD Compliance Assessment in Appendix 9-4. The Castlecomer and Shanragh GWBs directly underly the proposed Wind Farm site, and current status is Good and a potential status change for both GWBs without mitigations is shown in Table O. I accept the applicant’s conclusion that there is limited potential for the proposed Wind Farm to alter the overall status of the GWBs with localised temporary dewatering at excavations resulting in additional water volumes to be treated and drawdown from the local groundwater table, and

impact on water quality from accidental spillage of hydrocarbons and other pollutant. Castlecomer and Shanragh GWBs are also below the grid connection route, however this work is noted as shallow and transient. Dinin (South)_20 SWB current status is Good, all other SWBs within zone of influence of the proposed Wind Farm have a Moderate status. I note there is the potential for the proposed Wind Farm without mitigations to alter the status of Dinin (South)_20 and further downstream the Dinin (Main Channel)_010 and Dinin (Main Channel)_020 although potential water quality effects will decrease downstream due to increasing water volumes (Table O). The main risk is from surface water runoff from soil/peat during the construction phase, tree felling and release of suspended solids and nutrient, and accidental spillage of hydro carbon, cement based products and drilling fluid. Instream works is required on an existing degraded culverted crossing within the site, with potential for morphological changes. No instream works required at any other crossings of watercourses. There will be increased impermeable surface which could result in increased water runoff if not attenuated for within the site. Dinin (South)_20 is also downstream of the strengthening works to Black Bridge and adjacent to the grid connection route, however there is limited potential for this works to alter the overall status as the works is minor in nature and temporary/transient. Any potential deterioration in surface water quality has the potential to affect the River Barrow and River Nore SAC. There is limited potential for the proposed Wind Farm to affect the River Nore SPA given distance.

Mitigation measures to prevent any negative impact on the water quality have been included and I have assessed these as reasonable to prevent any significant effects on water quality. Measures to prevent morphological changes and the drainage system to prevent increased water runoff are also noted. Therefore, having regard to the construction works and those mitigation measures which protect the water quality I am satisfied the proposed Wind Farm will not cause deterioration and will not impede the objective of achieving good or high status of any surface water or ground water body.

Groundwater flow and levels

Observations have raised concerns regarding groundwater vulnerability within the site, impact on groundwater flow and impact on groundwater corridors in the

surrounding area. The EIAR Chapter 8, Section 9.3.9 outlines that Extreme vulnerability rating as mapped covers the southeastern part of the site where no infrastructure is proposed, and that all infrastructure is proposed within Moderate vulnerability. It continues by noting that due to thin peat coverage and bedrock outcrops noted in streams, that the vulnerability rating is considered to be High to Extreme. I am, therefore, satisfied that the groundwater vulnerability applied to the assessment has taken account of site investigations. The underlying bedrock aquifers are mapped as low permeability and the EIAR outlines that this indicates that groundwater flow paths are likely to be short (30-300m) and discharges appearing close by and into local streams. The EIAR further notes that site is elevated, and groundwater will flow downslope, discharging into nearby surface water streams towards the west. Watercourses are noted to act as hydrological barriers. No significant groundwater dewatering is expected to be required, and the potential for water level drawdown is considered negligible. I further note the output of the site investigations and the infrastructure being located in areas of shallow peat. Given this, I am satisfied that the matter has been sufficiently addressed in the EIAR and that the proposed Wind Farm will not result in significant effects on groundwater levels or flows. I have addressed potential impacts on private water supplies below.

Private Water Supply

The Commission will note observation made to the appeal raised concerns regarding impact on public water supply (Rural Residents Wind Aware & Environmental Group, with commissioned expert opinion by Hydro-G).

The potential for the proposed Wind Farm to impact on the Paulstown PWS has been assessed in the EIAR. Taking account of different groundwater catchment areas and underlying bedrock at the site, the EIAR concludes that there is no potential for effects on the Paulstown PWS as a result of the proposed Wind Farm. The applicant has reiterated this in the Appeal Submission, and notes that the Zone of Contribution used in the impact assessment is still applicable given the underlying geology has not changed and that the additional abstractions proposed at Gorwan as referred to in observations are located within the current boundaries of the Paulstown Spring Source Protection Area (SPA).

In this regard, I note from Uisce Éireann website that they commenced works on the Gowran Regional Water Supply Scheme in September 2024 and that these works are scheduled for completion late 2025[1]. Having carried out an ePlans search, I note this scheme was granted planning permission under reg. ref. 19/503 (as amended by reg. ref. 23/60168). The associated planning documentation by Uisce Éireann sets out that the raw water for the current scheme, Paulstown PWS, is sourced from the Tobergoolick Pool, a groundwater spring source c. 2km south of Paulstown. The permitted upgrades, addressing water supply demand and security across Gowran, Goresbridge and Paulstown, comprise the advancement of two existing boreholes, drilling of one new borehole (c. 100m deep) and construction of Gowran Water Treatment Plant (WTP) at Woodquarter, north of Gowran along the R448 (c. 2km southwest of Tobergoolick Pool spring). I note these works are all located within the existing source protection area associated with Paulstown PWS as detailed in EIAR Figure 9-12 and which corresponds with current GSI and EPA mapping for same. The borehole abstraction points and Tobergoolick Pool spring are within the River Barrow GWB catchment, whilst the proposed Wind Farm as noted above are located within the River Nore catchment.

I am, therefore, satisfied that the matter has been satisfactorily addressed in the EIAR and that the proposed Wind Farm will not result in significant effects on PWS.

Private Wells

Observations have raised concerns regarding potential impact on local private wells. I note the baseline within the EIAR, the nearest dwelling is 724m from T03 and many of the dwellings are located in the Barrow River catchment and as noted above, the site is in an elevated position and drains towards the southwest and the nearest dwelling in this direction is 731m to T07. Existing streams are also noted to provide hydrological barriers and the aquifer within the site has low permeability. The construction work will not result in any significant dewatering works, and no effects on the groundwater levels/quantities are anticipated. Works along the grid connection route is noted as shallow. The main threat to groundwater wells is identified from accidental groundwater contamination, albeit this is considered

[1] Gowran Regional Water Supply Scheme | Our Projects | Uisce Éireann (formerly Irish Water)

unlikely, and mitigation measure have been identified. I am, therefore, satisfied that the matter has been satisfactorily addressed in the EIAR and that the proposed Wind Farm will not result in significant effects on private water wells.

Drinking Water Risk Assessment

Observations have noted that the applicant has failed to carry out a Risk Assessment under the Drinking Water Directive (EU, 2020/2184). In this regard the Drinking Water Source Protection, Technical Guidance (July 2024) has been developed to meet the requirements of recast Drinking Water Directive (EU, 2020/2184), the European Union (Drinking Water) Regulations 2023 (S.I. No. 99 of 2023) and is complementary to the overall WFD implementation process. The Technical Guidance provides the national approach to "the protection of drinking water at the source within the catchment that contribute water to individual abstraction points" which is primarily a matter for water suppliers. In relation to this, it states that 'source' under the recast Drinking Water Directive is understood to "be the borehole, well, spring, infiltration gallery, lake, river, or impoundment from which water intended for human consumption is taken", whilst under the WFD 'source' can be a specified water resource used for water supply or a source of pollution. Having regard to this, the Technical Guidance, Appendix V defines that the responsibility for carrying out the risk assessment primarily which also includes the delineation of catchment area lies with water suppliers, and it is therefore, not applicable to the proposed Wind Farm. As set out above, an assessment under the Water Framework Directive have been carried out (Appendix 9-4).

9.10.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential effects on water as a result of the proposed Wind Farm would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. I am therefore, satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative effects on the water.

9.11. Air Quality

No issues have been raised by any party to the appeal in respect of air quality. Relevant conditions recommended by the Carlow County Council's Environment Department and the HSE are addressed in Section 8.7 above and not repeated herein.

I have examined **Chapter 10** of the EIAR which deals with this topic. Exhaust emissions will arise from construction vehicles including the transport of turbines, construction materials, waste and workers and from the use of construction plant and machinery. The excavation of the proposed Wind Farm and the movement of HGVs will give rise to localised dust emissions. The air quality in the vicinity of the proposed Wind Farm is considered to be typical of a rural area. Sensitive properties in relation to dust deposition band have been identified in Figure 10-2. Without mitigations, potential construction effects in terms of air quality are predicted to be short term, slight to moderate and negative. Similar effects, but less impact are predicted during decommissioning. Having regard to best practice mitigation measures to reduce the effects of exhaust and dust emissions as outlined in sections 10.3.2.1 and 10.3.2.2 and incorporated in the CEMP (Appendix 4-4) relate to construction vehicles, machinery and haul routes, wheel wash facility, waste management, dust suppression measures, and minimising excavation areas and stockpiling, I am satisfied that there is no potential for any significant residual direct, indirect or cumulative construction (and decommissioning) effects on air quality as a result of the proposed development.

Limited potential for exhaust and dust emissions to arise during the operational phase are noted and effects are predicted to be long term, imperceptible and negative. The proposed Wind Farm and the provision of renewable energy to approximately 28,832 households will offset approximately 37,312 tonnes of CO2eq per annum, as such, overall, the Proposed Project will have an overall long-term moderate positive and cumulative residual effect on air quality. This represents a long term slight positive effects on human health.

9.12. Climate

The Commission will note that observations raise concerns with regard to the loss of 19ha of forestry and removing capacity of sequestration of 5 million kgs of CO2 emissions. Observations note that it is proposed to deliberately move almost 30,000m^3 of peat, and that this only accounts for turbine foundations. Concerns raised regarding source material for turbine masts are addressed in Section 9.4 above.

I have examined **Chapter 11** of the EIAR which deals with Air quality and **Appendix 11-1** Carbon Calculations. Land, soil and geology are addressed in Chapter 8 of the EIAR. Description of the Proposed Project is set out in Chapter 4 and Appendices 4-1 to 4-8.

The **Carbon Calculations** are presented in Appendix 11-1, and I note these include for a maximum removal of 22,922.1m^3 volume of peat and for a maximum loss of 19.1ha of forestry as well as other identified main CO_2 carbon losses. The estimated total excavated peat volumes are detailed in EIAR Table 8-13, and include all relevant infrastructure elements. No peat removal is predicted for the grid connection route which trenches are located within the public road. The estimated total volume of peat to be excavated is 22,338m^3 and includes a bulking factor of 20%. Excavated peat are to be managed in peat deposition areas (8 no.) with a total volume capacity of 24,700m^3 with details provided in Appendix 4-2 Peat and Spoil Management Plan. Peat is not proposed to be removed from site.

The proposed development is expected to give rise to 93,080 tonnes of CO_2 equivalent losses and of these 43% of losses are from the proposed Wind Farm, 32% due to back up whilst reduced carbon fixing potential equates to 1%, the removal of peat 3% and forestry felling 9%. The remaining losses are from embodied carbon in construction, materials (11%) and construction phase transport (1%). It is noted in Chapter 11 that the actual CO_2 losses are anticipated to be less when the BMEP and the Decommissioning Plan are accounted for. The **carbon savings** calculations applies a 31% load factor and a carbon load figure of 297.4 gCO2/kWh which I concur with the applicant is a conservative figure. A rated output of 6.6MW per turbine, total estimated output of 46.2MW, is used to calculate the anticipated power output. Based on this, the proposed wind farm will displace approximately

37,312 tonnes of carbon dioxide per annum (1,305,920 tonnes over 35 years). The carbon estimated losses equates to 7% of the total amount of carbon dioxide emission that will be offset by the operation of the proposed Wind Farm. The estimated payback time to offset the 93,080 tonnes of CO_2 losses is 2.5 years (30 months) of operation. The applicant further notes that measures to offset the loss of carbon fixing vegetation are set out in the Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4) including planting of hedgerow and woodland (approximately 3,350m of hedgerows). In addition, the 19ha of forestry to be felled will be subject to afforestation as per Forestry Service's policy and as detailed in Chapter 4 of the EIAR.

As part of its functions the Commission must, in so far as practicable, perform its functions in a manner that is consistent with a) the most recent approved climate action plan, b) most recent approved national long term climate action strategy, c) national adaptation framework, sectoral plans, d) furtherance of the national climate objective and e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State[2]. The long term positive effect from the carbon savings will support the objectives of these plans and the national transition towards a low carbon, climate resilient and sustainable nation.

Having regard to procedures and measures described in the CEMP (Appendix 4-4) on waste management, vehicle and plant maintenance and sourcing of materials, I am satisfied that potential negative effects on climate would be avoided, managed and mitigated. The greenhouses gas emissions as a result of the Proposed Project will be offset by the operation of the proposed Wind Farm. I am satisfied that there will be a long term moderate positive residual effect on climate as a result of the Proposed Project due to the displacement of CO_2 from the atmosphere arising from fossil fuel energy production. In reaching this conclusion, I have had regard to the cumulative impact of the wind farms and solar farms in the study area. There is the potential for significant cumulative positive effect on climate by reduced greenhouse gas emission from increased electricity generation from renewable sources.

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

9.13. Noise and Vibration

9.13.1. Issues Raised

The planning authority's reason for refusal No. 3 is largely based on the HSE submission. The HSE outlines that an examination of the background noise levels and predicted cumulative noise levels for night time noise indicates an increase of more than 10dB(A) at a number of noise assessment locations at varying wind speeds, and that this would be a significant change in the night time noise environment at a number of sensitive receptors which could have an adverse effect on health. HSE recommends further assessment and possible mitigation measures to ensure that noise levels do not have an adverse impact on local residents.

Observations (including Rural Residents Wind Aware & Environmental Group, with commissioned opinions from Grosvenor Consulting and Huson & Associates) raised a number of noise assessment related concerns including guidelines, noise limits sound power levels, ambient noise, infrasound, low frequency and amplitude modulation. I have addressed concerns raised by observations regarding the layout of the proposed Wind Farm in Section 8.6.2 and as such, not repeated it herein. I have addressed concerns raised by observations regarding proximity of proposed turbines to residential receptors in Section 8.4 and as such, not repeated it herein.

9.13.2. Context

Noise and Vibration is addressed in Chapter 12 and Appendices 12-1 to 12-3 of the EIAR. Description of the proposed Wind Farm is set out in Chapter 4 and Appendices 4-1 to 4-8.

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

- Section 12.4.1.1: Construction Noise Methodology.
- Section 12.4.1.3 to 5: Operational Wind Turbines and Cumulative Noise Methodology.
- Section 12.4.1.6: BESS Operational Noise Methodology.

9.13.3. Baseline

The site is located in a rural location. 158 Noise Sensitive Receptors (NSRs) are identified within c. 2km of the proposed Wind Farm (EIAR Figure 12-2). Nearly all the NSRs are residential properties except for a few derelict properties and a church. Derelict properties were scoped out of the assessment. 18 NSRs were chosen as Noise Assessment Locations (NALs) for construction (CNALs), operation (NALs) and BESS (BNALs).

Background noise monitoring was undertaken over the period 26th January 2023 to 5th April 2023 at the 7 Noise Monitoring Locations (NMLs) selected to represent background noise levels for all NSRs (EIAR Table 12-5). Existing background noise levels are generally considered to be low (below 30dB at low wind speeds) at the majority of NSRs. Predominant sound sources were wind passing through vegetation or around buildings, birdsong and occasional cars passing on local roads.

The cumulative wind turbine baseline identifies the operational Gortahile Wind Farm (8T) and the permitted Bilboa Wind Farm (5T) and White Hill Wind Farm (7T).

9.13.4. Likely Potential Effects

Table 9.7: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• No change.
Construction	• Proposed Wind Farm: • Noise levels predicted for construction assessment scenarios 01 to 04 are below the 65dB(A) daytime threshold (BS5228) at all CNALs, and below the 55dB(A) evening and weekends threshold (BS5228) at all CNALs except CNAL14 in Scenario 01. • CNAL14 is located adjacent to the site entrance on L3037 and Scenario 01 include for the construction of the site entrance and access tracks. The construction of access tracks adjacent to the property outside core hours is not a likely occurrence. Noise levels predicted for the nighttime scenario (unlikely occurrence) is below the 45dB(A) threshold(BS5228) at all CNALs. No significant construction noise effects predicted. • Grid connection route (2km): • Noise levels from trenching/backfilling operations are likely to be in the region of 75 – 80 dB(A) when occurring within 20m of a dwelling, exceeding the 65dB(A) threshold (BS5228). These operations are anticipated to move at c. 150m to 300m per day, and only likely to

Project Phase	Potential Direct, Indirect and Cumulative Effects
	occur outside a dwelling for a few hours a day. Relatively small amount of plant required. • Watercourse crossings at Bridge 6 and 7 by HDD (a small Vermeer D36 x 50 Directional Drill is proposed), assuming a source noise level of 94 dB(A) at 1m, noise levels are calculated to be below the 65dB(A) threshold (BS5228) when occurring at a distance of 30m of a dwelling. Potential exceedance of 65dB(A) threshold within 30m of a residential dwelling. A crossing is anticipated to take within 1 to 2 weeks. • Vibration: Given separation distances, no significant effects are anticipated from the proposed Wind Farm site. Local vibration effects from grid connection construction activities in proximity to residential receptors are expected to be low and of limited duration.
Operation	• Candidate turbine: As a precautionary approach candidate turbine for the modelling is Vestas V150. Other two candidate wind turbines is provided in Appendix 12-2 and noted to show very similar predictions and outcomes when compared to the V150. • Wind Turbines Stage 2 – Cumulative Noise Assessment: Predictions show that the proposed Wind Farm can operate in combination with Bilboa Wind Farm and White Hill Wind Farm and meet the total 2006 Guidelines (day-time and night-time) noise limits at all NALs except at NAL15. A marginal daytime exceedance of 0.7dB at 6m/s, and potential for significant effect at NAL 15. • Wind Turbines Stage 3 - Site-Specific Noise Limits (SSNLs): SSNLs derived from considering the proportion of the total 2006 Guidelines noise limit already allocated to or theoretically be used by operational/permitted wind farms. Predicted noise levels for the proposed Wind Farm meets SSNLs at NALs (1-3, 7-14, 16-18). SSNLs not predicted for NALs 4-6, as cumulative noise condition established for permitted Bilboa Wind Farm proposed (Stage 2 assessment applies). A marginal daytime exceedance of SSNLs (0.8dB at 6m/s, and broadly north easterlies) is predicted at NAL15, and potential for significant effect. • Other Amplitude Modulation (OAM): Not possible to predict if OAM will occur at the NALs and if it does, how frequent and sustained it might be. Potential for an adverse impact in the absence of mitigation. • BESS: Predicted operational noise levels significantly below BS8233, no significant effects.
Decommissioning	• Activities would use plant similar to those considered for construction activities and occur at the same locations. Noise level output expected to be no higher than the construction phase, no significant noise and vibration effects anticipated.
Cumulative	**The Proposed Project:** • No significant in-combination construction noise and vibration effects predicted given the transient nature of the grid connection route. • No operational and decommissioning in combination effects. **Other developments:**

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• No cumulative noise construction effects are anticipated. Works will be temporary and considered very unlikely for cumulative works to occur at the same time and same location to any of the identified receptors. No significant cumulative construction noise and vibration effects. • Operational cumulative assessment as operational effects above. Potential for significant cumulative operational noise effects at NAL 15.

9.13.5. Mitigation

Construction mitigations are set out in Section 12.7.1 of the EIAR:

- Good practice during construction to minimise any potential noise and vibration effects is recommended and presented in the CEMP (Appendix 4-4).
- Normal core construction hours will be 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 Saturday. Agreement in advance if occasional work is required outside of core hours.
- Good onsite practices will be implemented to minimise the likely effects, and particular care will be taken at watercourse, culvert and drain crossings. Simple control measures recommended in Section 8 of BS 5228-1:2009+A1:2014 are summarised in Section 12.7.1.
- Noise mitigation measures will be implemented where small HDD drilling rig activities are occurring within 30m of a dwelling and includes the erection of temporary boarding alongside the drilling rig or use of ‘acoustic blanket panels’ to hang from heras fencing or similar. This should be installed as close to the drilling rig as is practicable and fitted so as to interrupt any direct line of site between the drilling rig and the closest residential receptors. Examples of appropriate products include Echo Noise Defender and Soundex DeciBloc (Section 12.6.1).
- Operational mitigations are set out in Section 12.7.2 of the EIAR:
- Targeted use of mode management for a limited range of wind speeds and directions for daytime to demonstrate that noise limits can be met.
- In the event that complaints are received regarding OAM (i.e. beyond overall noise levels found in planning conditions), the developer is committed to

investigating noise complaints by appointment of a community liaison officer for whom complaints can be reported to and who will carry out a screening and liaise with the complainant in person and commission a detailed noise complaint investigation (by a qualified acoustic consultant). If frequent and sustained OAM is found, then appropriate mitigation measures would be designed and implemented such as, changes in turbine operation, addition of blade furniture and in extreme cases, targeted wind turbine shutdown in specific conditions.

9.13.6. Residual Effects

- No significant residual construction noise and vibration effects as a result of the proposed development, or cumulatively in combination with the Proposed Project and other developments, are predicted.
- Taking account of the implementation of mode management for NAL15 and mitigation measures to address a potential occurrence of OAM, no significant residual effects including cumulative from operational wind turbine noise are predicted.
- No significant residual effects from operational BESS noise.

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

Noise Assessment Guidance

The Commission will note observations (Rural Residents Wind Aware & Environmental Group, with commissioned opinions from Grosvenor Consulting and Huson & Associates) concerns relating to the noise assessment reliance on ETSU-R-97 and IoA Good Practice Guide, 2013 ETSU-R-97, noting that these are under review and not fit for purpose.

Planning guidance for wind turbine noise assessment in Ireland and the approach for setting noise limits at receptors in the 2006 Guidelines are based on ETSU-R-97 (DoTI, 1996). This was confirmed in the review of wind turbine noise assessment in the Draft 2019 Guidelines. The Draft 2019 Guidelines are still subject to review, and the Commission will note that one of the key aspects being reviewed is the approach to noise. At the time of writing, no timelines were available for a future revised draft publication or for finalising the revised guidelines. ETSU-97-R which is a UK

Guidance for assessing wind turbine noise, is noted to remain unchanged since its publication in 1996. Whilst the 2006 Guidelines precede the supplementary guidance on predictions and cumulative provided in the IOA Good Practice Guidance (GPG) (2013), the GPG is recognised as a tool to inform wind turbine assessment in Ireland. Reviews of ETSU-97-R are currently being carried out by the UK Government with the publication of the "Report for UK Government: A review of Noise Guidance for Onshore Wind Turbines" (WSP, 2023), and the subsequent publication in July 2025 for consultation, a "Draft updated guidance: Assessment rating of wind turbines noise" (Department for Energy Security & Net Zero). Until such time as a final review position is published, the Commission will note that ETSU-R-97 remains the applicable guidelines for assessing wind turbine noise in the UK.

At a local level, I note the CDP in Section 16.12.2 Energy Development Projects outlines that renewable energy proposals will be considered in the context of current Government policy on the subject, and on the topic of noise consistency with the World Health Organisation's 2018 Environmental Noise Guidelines for the European Region should be demonstrated (WHO Guidelines). The WHO Guidelines as noted within the EIAR use noise indicator L_{den} (day and night time), an annual averaged index parameter commonly used for transport and described within the WHO Guidelines as "a poor characterization of wind turbine noise." I note the conversion within the Draft 2019 Guidelines was underpinned by the WHO Guidance, and that this is subject to review as noted above. I further note the WSP review (2023) advised that the WHO Guidelines (2018) "have limited relevance and are not considered to offer a robust platform for developing a framework of wind turbine noise effects thresholds."

Having regard to the above, the 2006 Guidelines remain in force and as such, I consider the methodology and noise limits within ETSU-R-97 to be generally supported by national planning policy. I find that the CDP requirement for the noise to be consistent to the WHO Guidelines (2018) in terms of wind turbines to be inconsistent with the 2006 Guidelines. The applicant confirms that the submitted operational wind turbine noise assessment follows the guidance in the 2006 Guidelines, supplemented by ETSU-R-97 and IOA GPG. I am, therefore, satisfied that the assessment methodology in the EIAR Chapter 12 and Appendix 12-2 to

assess and rate noise from the proposed Wind Farm including cumulative noise is in accordance with current guidance. The Commission will note that the HSE and the planning authority have not queried the noise assessment methodology applied by the applicant to the proposed Wind Farm.

Turbine Sound Power Level

Observations raise concerns that the candidate turbine with the greatest maximum rated output capacity (Siemens-Gamesa SG6.6-155, 6.6MW) was not used for the noise predictions and have queried the use of manufacturer's sound power data. The EIAR outlines that the noise predictions are based on the sound power level data for the Vesta 150 (6.0) MW turbine (see Section 12.4.1.3), as a precautionary approach. The Vesta 150 is noted to have been chosen as it resulted in the highest predicted levels of the candidate turbines and noted to be one of the loudest turbines of the candidate turbines at the key wind speed range. Prediction modelling results for the other two candidate turbines are noted to be included within Appendix 12-2. I am satisfied that the EIAR has assessed the turbine model resulting in highest noise prediction level at key wind speeds within the range available have been considered. Furthermore, I consider the use of turbine manufacturer's turbine sound power level for noise assessment to be standard and established practice.

In regard to incorrect turbine applied to White Hill Wind Farm as noted in observations, I note the EIAR refers to the Vesta V162 6.2MW and a hub height of 100m for White Hill Wind Farm. The Inspector's Report for White Hill Wind Farm notes that the EIAR assessment for that scheme was based on the Vestas V162-7.2MW turbine model and a 104m hub height, and that the EIAR for White Hill Wind Farm used the sound power levels for the Vestas V162-7.2 turbine. In this regard, I note the maximum sound power level as stated at Vestas webpage is 104.6dB(A) for the V162-7.2MW and slightly higher for the V162.6.2MW at 104.8dB(A) which has been used in the cumulative noise model. When factoring in the incorrect hub height, it is my understanding that this may result in a marginal increase in particular at lower wind speed. The two receptors that are located closest to White Hill Wind Farm is NAL17 and NAL18, and I note from EIAR Table 12-12 and 12-13 that predicted likely cumulative levels at these two receptors are well below the 2006 Guidelines limits during daytime and nighttime. I am, therefore, satisfied that any

adjustment in the cumulative noise modelling to correct the wind turbine model for White Hill Wind Farm will not alter the conclusion of the EIAR of no significant effects, furthermore noise levels can be controlled by noise limits. I have addressed concerns relating to noise limits below.

Ambient Noise

Observations raise concerns that no significant increase in ambient noise levels at any nearby residential receptors as per the 2006 Guidelines has not been addressed.

In my view, ambient noise as referred to in the 2006 Guidelines, "the average noise level over a given period of time, usually composed of sound from many sources, near and far" is in reference to background noise levels. I note the Draft 2019 Guidelines expands on the topic by outlining that the background noise level shall be taken as the ambient noise level excluding any existing or approved wind turbines. I am, therefore, satisfied that the noise assessment in the EIAR has satisfactorily addressed this topic as intended by the 2006 Guidelines by establishing the prevailing background noise levels at sensitive receptors and demonstrating that the proposed Wind Farm, subject to mitigations, can cumulatively operate within the 2006 Guidelines noise limits.

Operational Noise limits

Reason for Refusal No. 3 relates to night time cumulative noise and concerns raised by the HSE that these will exceed existing background noise levels by more than 10dB. Observations considers day and night time noise limits to be high and that the 2006 Guidelines noise level targets should be reduced. The Commission will note that observers have raised concerns regarding the application of noise limits set for consented wind farms to the proposed Wind Farm and lack of contour mapping.

As established above, existing planning guidance for operational wind turbine noise is set out in the 2006 Guidelines. The lower fixed limit for **daytime** is 45dB or background plus 5dB, whichever is the greatest, except in a low background noise environment where a fixed minimum limit in the range 35-40 dB is recommended. The applicant has adopted a cumulative noise limit of 40dB(A) where background noise levels are below 30dB and a limit of 45dB(A) or background plus 5dB,

whichever is the greater, where background noise levels are greater than 30dB. I note these aligns with standard wind farm noise conditions applied by the Commission and generally with the permitted cumulative noise limits within the area (White Hill Wind Farm and Bilboa Wind Farm). In terms of no noise contour mapping, I note the predicted noise levels are cumulative (include White Hill Wind Farm and Bilboa Wind Farm) and that the location of NALs and predicted noise levels are clearly detailed within the EIAR, I consider this acceptable.

The applicant predicts a minor cumulative exceedance of 0.4dB of the 40dB(A) daytime noise limit at NAL15 (NML6 background noise data used) at /6m s, and the applicant has proposed for mode management i.e. operating the turbines in low noise mode to be applied to mitigate this. I note the prevailing background noise level during daytime is 29.2 dB at 6m/s at NML6 (Table 12-7). The proposed mitigation measures are standard in nature, and I am, therefore, satisfied that it can be effectively implemented.

For NAL4, NAL5 and NAL6, the applicant states that cumulative day time noise limits are based on those permitted for Bilboa Wind Farm, and stated to be fixed at 45dB(A) from 4m/s wind speed. Similarly, for NAL17 and 18, the applicant has applied cumulative noise limits based on those permitted for White Hill Wind Farm, and stated to be fixed at 45dB(A) from 5m/s wind speed. I have reviewed both sets of consented noise limits, Bilboa Wind Farm (318295, Condition 13) and White Hill Wind Farm (315365, Condition 8). Both schemes were permitted with a fixed daytime (0700-2300) noise limit of 40dB(A) $L_{90,\ 10min}$ for wind speeds below 7m/s (at standardised 10m height), and as such, I note some of the cumulative noise limits for lower wind speeds where these are stated to represent permitted noise limits, specifically for Bilboa Wind Farm have been incorrectly applied in the EIAR.

I have applied the 40dB(A) where background noise levels are below 30dB(A) and a limit of 45dB(A) or background plus 5dB noise limits (detailed above) to NAL4, NAL5, NAL 6, NAL17 and NAL18. In this regard, I note a minor cumulative noise level exceedances of the fixed 40dB(A) day time limit at 6m/s wind speed are predicted at NAL4 (0.6 dB), NAL5 (0.5 dB) and NAL6 (0.5 dB). The background noise level at NML1 which is representative of NAL4, NAL5 and NAL6 is 29.4 dB(A) at 6m/s wind speed. At all other wind speeds at these receptors the proposed Wind farm will cumulatively operate within the 2006 noise limits. Given the higher prevailing

background noise levels at NML5 (30.5dB(A) at 1m/s) which is representative of NAL17 and NAL18, the daytime noise limit of 45dB(A) from 1m/s in the EIAR for these receptors remains applicable and the proposed Wind Farm is predicted to cumulatively operate well within this noise limit. The Commission will note observations raised concerns regarding the application of noise limits set for consented wind farms to the proposed Wind Farms. Whilst I largely concur with the principle of the assessment approach in the EIAR recognising the complexity of having various cumulative noise limits for one receptor, I have for the reasons outlined above considered the 40dB(A) where background noise levels are below 30dB and a limit of 45dB(A) or background plus 5dB daytime limits applicable to all the NALs. Furthermore, I have not restricted this in terms of wind speed similar to the approach taken in the planning conditions for Bilboa Wind Farm and White Hill Wind Farm by the Board at the time, and I note at 7m/s the prevailing back background at 18 NALs are above 30dB(A) and this would be considered unnecessarily restrictive and not aligned with the 2006 Guidelines.

For **night time**, the 2006 Guidelines set a fixed limit of 43dB(A). The applicant has adopted this approach with the addition of a background plus 5dB(A), whichever is the greater parameter, and the applicant outlines that this approach aligns with planning conditions. I do not necessarily dispute the applicant's statement that some wind farm schemes may have been permitted with a greater nighttime noise limit than 43dB(A), however as set out above, the 2006 Guidelines are applicable. Furthermore, in regard to cumulative considerations I note both the permitted Bilboa Wind Farm and White Hill Wind Farm are both subject to a 43dB(A) night time noise limit. In this regard, a consistent approach by the applicant to cumulative noise limits would have been to apply a fixed nighttime limit of 43dB(A). The Commission will note my comments above that varying cumulative noise limits for one receptor.

The HSE did not object to the application but sought mitigation measures with the aim to reduce the predicted cumulative night time noise where these were predicted to be greater than 10dB above existing background noise levels. In this regard, I have already addressed the 2006 Guidelines and noise limits pertaining to this above and confirmed that the 43dB(A) fixed night cumulative noise limit is applicable. I have reviewed the predicted cumulative night time noise levels for the 18 NALs, and I am satisfied that these do not exceed the 43dB(A) fixed limit as per the 2006

Guidelines. The Commission will also note that the HSE confirms that the predicted cumulative night time noise levels are in accordance with the 2006 Guidelines i.e. the 43dB(A) fixed limit. The HSE also references the Draft 2019 Guidelines and the WHO Guidelines which I have considered above. The HSE used NAL4 as an example in its direct comparison of background noise levels and cumulative nighttime noise levels and noted that these indicated an increase of more than 10dB(A) at wind speed 4-7m/s. It should be noted here that the HSE did not in its comments consider predicted cumulative noise levels already permitted i.e. Bilboa Wind Farm (applicable to NAL4), and as such the comments appears to attribute the full predicted cumulative noise levels to the proposed Wind Farm. The applicant's Appeal Submission has included a comparison table for NAL4 which details predicted cumulative noise with and without the proposed Wind Farm. As outlined by the applicant, this shows that the permitted cumulative nighttime noise levels are in certain circumstances already 10dB(A) above background noise levels and further confirms that the addition of the proposed Wind Farm is not increasing cumulative noise levels by 10dB(A). I note the increase in cumulative noise levels at NAL4 attributed to the proposed Wind Farm ranges from 2.4dB(A) at 3m/s and 3.7dB(A) at 7m/s.

I concur with the applicant as set out in the Appeal Submission that the applicable test is whether or not the calculated wind farm noise levels at nearby sensitive receptors, individually and cumulatively, will be below the noise limits derived in accordance with the 2006 Guidelines. Having regard to the above, I am satisfied that the applicant has satisfactorily demonstrated that the proposed Wind Farm, subject to mitigations, can cumulatively operate within the daytime and nighttime noise limits of the 2006 Guidelines. I am, therefore, satisfied that the proposed Wind Farm will not result in significant effects on sensitive receptors. I note the mode management mitigation measure as detailed within Chapter 12 of the EIAR is not listed in Chapter 18 Schedule of Mitigation, and I am satisfied that this can be addressed by the recommended condition to submit a complete schedule of mitigation measures.

Site Specific Noise Limits

The Commission will note that the applicant's assessment derived Site Specific Noise Limits for the proposed Wind Farm which took account of the proportion of the

cumulative noise limits based on the 2006 Guidelines already allocated to other consented or operational wind farms. These are presented in Section 12.6.3.3 and Table 12-14 and 12-15, and excludes NAL4, NAL5 and NAL6 for which the applicant has proposed a cumulative noise limit based on those permitted for Bilboa Wind Farm (see above). The applicant has included a suggested noise condition in Appendix 12-2 detailing the application of Site Specific Noise Limits.

The Commission should note that these Site Specific Noise Limits do not form part of the applicant's noise mitigation strategy for the proposed Wind Farm, and as such, I am satisfied that in the event that the Commission is minded to grant permission a condition specifying the 2006 Guidelines' noise limits would be appropriate. Furthermore, I do not consider Site Specific Noise Limits appropriate in this instance noting the noise limits controls permitted for Bilboa Wind Farm and White Hill Wind Farm are the cumulative 2006 Guidelines noise limits.

Low Frequency and Infrasound

Observations have raised concerns that the EIAR is deficient in the assessment of low frequency noise and infrasound.

I note Section 3.2 of EIAR Appendix 12-2 includes relevant research. Infrasound refers to sound at frequencies below 20 Hz, and the applicant outlines that infrasound from wind turbines is typically at levels below that of the noise generated by wind around buildings and other obstacles. The applicant considered the WSP review (2023) which concluded that "the findings from the existing evidence base indicate that infrasound from wind turbines at typical exposure levels has no direct adverse effects on physical or mental health." I note this conclusion is also referenced in the UK Draft updated guidance (2025) which identifies infrasound as not requiring assessment outlining that for modern upwind turbines the levels of infrasound at typical receptor distances are well below the threshold of perception.

Based on relevant research, low frequency noise was also scoped out of the assessment by the applicant. Low frequency refers to sound occurring in range of 20-200 Hz, and the applicant outlines that wind turbines do produce low frequency sounds, but our threshold of hearing at such low frequencies is relatively high and they therefore go unnoticed. The applicant further outlines in the Appeal Submission

that the operational noise related planning conditions controls the A-weighted noise levels and as such, additional controls are not necessary. I note the same approach is taken in the recently published UK Draft updated guidance (2025) which outlines that no specific low frequency limits are necessary to control wind turbine noise and that sensitive receptors are considered to be suitably protected from low frequency sound by the noise A-weighted level control measures.

Having regard to the above, I am satisfied that the exclusion of infrasound and low frequency noise from the noise assessment in the EIAR reflects most recent research on the matter and that this has been clearly demonstrated by the applicant.

Amplitude Modulation

Observations raise concerns that no penalty to account for these special characteristics have been included.

Amplitude Modulation (AM) is discussed in Section 12.4.1.4 of the EIAR and Appendix 12-2, Section 3.3, and describe a variation in noise levels over time. Research distinguishes between Normal Amplitude Modulation (NAM) and Other Amplitude Modulation (OAM), whereby NAM is expected to be heard at most wind farms and OAM is considered more unusual and heard at some wind farms. The EIAR described OAM as “unusual feature of aerodynamic noise from wind turbines, where a greater than normal degree of regular fluctuation in sound level occurs at the blade passing frequency, typically once per second.” The applicant confirms that NAM is inherent in ETSU-R-97 and addressed in the noise limits, which I have considered above.

On the topic of OAM, the applicant’s research concludes that there are methodologies available to measure and quantify OAM, but that further study is required to help quantify what level OAM, if any, is acceptable, and that there are measures available which can mitigate OAM and that these would need to be designed on a site specific basis. The EIAR further notes that, taking account of the WSP review (2023), the approach recommended in the IOA GPG is still considered valid i.e. not to assign a planning condition to deal with AM. I note observations disputes the application of the IOA GPG. The more recently published Draft updated guidance (2025) for the UK outlines that it is generally not possible to predict the

occurrence of tones and elevated AM characteristics at the planning stage given these are not an expected general characteristic of wind turbines. Usually, such noise is noted to be associated with a specific design or component malfunction and combined with operational characteristics. The draft UK guidance proposes to deal with character corrections for such noise during compliance measures within the permitted noise limits. I note a similar approach is advocated by the applicant who proposes to appoint a community liaison officer as part of its mitigation strategy and states a commitment to investigate noise complaints. The applicant's proposed condition included in Appendix 12-2 outlines a proposed complaint and investigation procedure.

Having regard to the above, I am satisfied that the consideration of AM within the EIAR is sufficiently comprehensive, and this have been recognised by observations who agree that AM has been considered at length in the EIAR. There is currently no requirement in applicable guidelines for a penalty scheme to account for OAM as requested by observations, and no relevant guidelines have been referenced by observations to support the request. I, therefore, concur with the applicant that these are potential operational noise characteristics that can only be confirmed, if applicable, and addressed during operation of the proposed Wind Farm. In this regard, I am satisfied that a planning condition to control cumulative noise limits cover all noise generated from the proposed Wind Farm whether tonal and/or AM. Furthermore, I am, therefore, satisfied that the commitment to investigate noise complaints and where applicable, design and implement appropriate mitigation measures as outlined in the mitigation measures of the EIAR adequately covers this (MM101, Chapter 18).

9.13.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that the main significant direct and indirect effects on noise and vibration that arise during the construction phase of the proposed Wind Farms can be mitigated by the application standard good construction practices. During operation, the noise environment in which the proposed Wind Farm is situated will change, however, I am satisfied that noise levels, individual and cumulatively,

subject to mitigation measures, will not be significant and noise limits can be controlled by condition. In reaching this conclusion I have had regard to the cumulative impact of the Proposed Project and other renewable energy projects in the study area.

9.14. Cultural Heritage

9.14.1. Issues Raised

The planning authority has raised concerns that the potential conflict between the proposed works and permitted works (White Hills Wind Farm) to Black Bridge has not been considered.

As noted in Section 4.4, no issues have been raised by DAU and recommended conditions are addressed in Section 8.7 above and not repeated herein.

9.14.2. Context

Cultural Heritage is addressed in Chapter 13 and Appendix 13-1 of the EIAR. Chapter 14 sets out the Landscape and Visual assessment and incorporates Zone of Theoretical Visibility (ZTV) and photomontage / photowires relevant to the assessment in Chapter 13. Bridge Crossing Structural Assessment Report is included in Appendix 4-5.

9.14.3. Baseline

The following cultural heritage assets were recorded within the site and the study areas:

- No new previously unrecorded above-ground archaeological monuments or items of cultural heritage were noted within the proposed site. There is potential sub-surface archaeological sites or features.
- Historic maps shows field enclosures and small structures within the site. No visible trace noted of structures shown on later second edition OS map at the road to T01 and T02 proposed to be upgraded (Figure 13-11). The bridge along the proposed Grid Connection Route in Co. Carlow is noted to be of cultural heritage merit (Ref. 8, Table 13-12).

- Three National Monuments are located within the 10km study area of the proposed turbines, Nat. Mon. No. 438, Leighlinbridge Castle, Nat. Mon. No. 352, Cross, and PO. No. 3/1995, Clogrenan Castle. These are all located within Co. Carlow at distances ranging from c. 5.8km to 9km from the nearest turbines (see Table 13-3 and Figure 13-3).
- No recorded monuments are located within the site. 68 recorded monuments of varying types and from different periods of the archaeological record are located within the 5km study area of the proposed turbines (Table 13-4 and Figure 13-15). The nearest monument, an enclosure (CW011-006--) is within 892m of T07. None of the monument are located in proximity to the proposed Grid Connection route within County Carlow.
    - There are 19 monuments form the pre-historic period. The closest being the ditch barrow (CWW011-002--) at c. 1.39km from T01.
    - There are 18 monuments form the early medieval period, mainly represented by enclosures, ringforts and souterrains.
    - At least 6 monuments are from the medieval period including unclassified castle, a bawn, moated site and historic town (deserted medieval borough) and memorial stone.
    - There are 13 monuments with religious associations (various periods).
- The nearest archaeological landscape is within Co. Kilkenny, c. 12km.
- No protected structures located within the site. 9 protected structures (7 in Co. Carlow and 2 in Co. Kilkenny) are located within 5km of the nearest proposed turbines (Table 13-5 and Figure 13-7). The nearest structures are those within Co. Kilkenny, a mill (ref. D83) at 1.5km from T06 and Black Bridge (ref. D84) at 1.8km from T01. The mill is located in proximity to the proposed Grid Connection Route within Co. Carlow and strengthening works is proposed to Black Bridge.
- No NIAH structures are located within the site. 16 NIAH structures are located within 5km of the proposed turbines (Table 13-6 and Figure 13-9). The nearest structures include a mill (Reg. 12401109) and miller's house (Reg. 12401110) at c. 1.5km from T06. As above, the mill is located in proximity to the proposed Grid Connection Route within Co. Carlow.

- One historic garden is located within 5km of the proposed turbines, Glebe House (Reg. 12401107) at c. 4km from T01.

9.14.4. Likely Potential Effects

Table 9.8: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• No change to current land-use practice of low intensity agriculture and commercial forestry. Opportunity to harness wind energy resource and the reduction of greenhouse gas emissions would be lost.
Construction	• Archaeological heritage: No direct or indirect construction effects predicted on known features. Potential for direct negative and permanent on unrecorded sub-surface archaeological sites/features. • Heritage structures: The proposed permanent strengthening works, including raising of the parapet walls, to Black Bridge (Co. Kilkenny RPS D84, NIAH reg. 12401111) will result in a permanent, direct, slight effect to the structure. HDD proposed at bridge crossing along proposed Grid Connection Route, and no direct effects to bridge structures predicted.
Operation	Indirect effects: • National Monuments: A not significant effect to the wider setting of Nat. Mo. 352, Cross at 9km distance to T05. No visual effects on the setting of Leighlinbridge Castle (Nat Mo. 438) and Clogrenan Castle (PO No. 3/1995). • Recorded Monuments: Visual effects on the setting of recorded monument within 5km (68), at most imperceptible to slight and Not Significant. • Protected Structures: Visual effects on the setting of protected structures, imperceptible to moderate and Not Significant. • Black Bridge – direct effects: The proposed raising of the parapet walls of Black Bridge (RPS D84, NIAH reg. 12401111) will alter the appearance of the bridge and is assessed as having a Slight visual effect on the structure. • NIAH Structures/Historic Gardens: Visual effects on the setting of NIAH Structures and Historic Gardens, imperceptible to moderate and Not Significant.
Decommissioning	• No potential effects, resolved during construction phase mitigations.
Cumulative	**The Proposed Project**: • Black Bridge – as above. **Other Developments**: • White Hill Wind Farm: Includes permission for similar upgrading works to Black Bridge (RPS D84, NIAH reg. 12401111) and same mitigation measures are proposed. No potential cumulative construction effects identified.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• National Monument: Visual effects on the wider setting of Nat. Mo. 352m cumulative with White Hill Wind Farm and Bilboa Wind Farm, increasing to not significant-slight. Not Significant • Recorded Monuments: Visual effects on the wider setting of recorded monuments within 5km cumulative with cumulative with Gortahile Wind Farm, White Hill Wind Farm and Bilboa Wind Farm, increase to slight to moderate. Not Significant. • Protected Structures/NIAH: No cumulative effects to the immediate setting, and cumulative effects on wider setting Not Significant.

9.14.5. Mitigation

- Pre-construction archaeological testing will be carried out under licence from the National Monuments Service.
- Archaeological monitoring of all groundworks during the construction stage of the Proposed Project by a licensed archaeologist.
- Preservation in situ (avoidance), preservation by record (excavation), buffer zones may be required depending on the results of the testing/monitoring.
- Raising of parapet walls on Black Bridge will be in keeping with the character and appearance of Black Bridge and carried out in consultation with the planning authority.
- Comprehensive parapet wall construction works plan will be carried out.

9.14.6. Residual Effects

No significant residual direct or indirect effects are predicted.

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

Black Bridge

The southern section of the Black Bridge along the L3037 is located within Co. Carlow and has been included within the application. As noted by the planning authority, Black Bridge is a Protected Structure (RPS, Ref. D84) within Co. Kilkenny and no concerns have been raised by the planning authority with regards to the proposed strengthening works. Kilkenny County Council outlines that they have addressed works proposed to the bridge in the concurrent application (see Section

1.1.2 above). I have also addressed the strengthening works proposed to the Black Bridge in my Inspector's Report for ref. 322225-25 which decision is pending. For consistency and taking account of the planning application boundary, I have also addressed it herein.

Black Bridge is described as a single arch rubble limestone road bridge spanning Dinin River from c.1875 and is included in the RPS and NIAH (RPS Ref. D84, NIAH Reg. 12401111). As set out in EIAR Section 13.3.3.12.2, the NIAH appraisal considers the bridge represents "an important element of the mid to late nineteenth-century civil engineering legacy of County Kilkenny a small-scale low-slung bridge reminiscent of contemporary railway bridges displaying a traditional construction in unrefined locally sourced stone makes a picturesque, if subtle impression in the rural landscape." It is described as comprising "irregular coursed squared rubble limestone walls with battered piers having rock-faced dressed limestone quoins, cut-limestone stringcourse supporting parapet having cut-stone date stone/plaque, and part ivy-clad cut-limestone coping. Single segmental arch with rock-faced cut-limestone voussoirs, and tooled limestone ashlar soffits."

The structural assessment provided in Appendix 4-6 concludes that the structure is in an overall good condition but that the carrying capacity of the arch in its current arrangement would not be capable of supporting an axle loading in excess of 12 tonnes required for the movement of standard wind farm delivery vehicles. The assessment outlines that the current fill depth across the span of the arch is on average 250mm and concludes that this would need to be increased by 200mm to 450mm to accommodate the increased load. In regard to the corresponding parapet works, I have reviewed Section 4.8.9 and Drawing S100-1 Black Bridge Proposed Modification Details. I note from Drawing S100-1 that the existing parapet is 1200mm above the existing rubbing strip and that the proposed parapet will be 1250mm above the new rubbing strip. Drawing S100-1 details an existing road surface and rubbing strip depth of 425mm and a proposed depth for the same of 575mm. Having regard to this, it appears that the proposed increase in the existing parapet (or wall) height on Black Bridge is c. 200mm. No works are proposed to the stone arch.

Having considered the assessment in Chapter 13, I concur with the conclusions of the applicant that alterations to the existing bridge in terms of road surface including addition of rubbing strips have already occurred and I consider the proposed fill and

surface works will as such not visually alter the structure. The EIAR concludes a permanent direct and Slight effect on Black Bridge taking into account the proposed increase in the height of the existing parapet, with Slight as per the assessment methodology referring to *"an effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site."* Taking account of the EIAR assessment methodology and Architectural Heritage Protection Guidelines for Planning Authorities (2011), I consider the effect on Black Bridge to be direct, **Moderate** rather than Slight and not significant. The proposed alterations to the height of the existing parapet are likely to be noticeable but will not substantially alter the structure or result in the loss of or damage to the character or compromise the integrity of the protected structure as set out above. Mitigation measures set out within the EIAR and as noted above, will reduce the effect, and I accept the conclusions of the applicant that the residual effect is not significant.

In my view, the assessment in Chapter 13 and the accompanying structural assessment (Appendix 4-4), drawings and photographic record (Appendix 13-1) are sufficient to allow for an informed decision to be made on the acceptability of the proposed alterations to Black Bridge (RPS Ref. D84, NIAH Reg. 12401111). Furthermore, I am satisfied that the mitigation measures within the EIAR are appropriate, and all prior to commencement, will provide for final agreement of the detail construction design and control during the works stages of the proposed development. The Commission will note that similar works to Black Bridge were permitted for White Hill Wind Farm (ABP-315365-22) and Condition 16 for same, requires the preparation of an Architectural Impact Assessment of Black Bridge prior to commencement.

I have considered the Transportation Department's request for a Structural assessment in Section 9.16 below, and conclude that the submitted structural report and design are sufficient for planning stage and that in accordance with standard practice, a more detailed pre-construction structural assessment of the Black Bridge will be undertaken detailed construction design stage.

9.14.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential direct effects on known and unknown archaeological and cultural heritage receptors would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. I am satisfied that there is no potential for significant indirect effects on the setting of archaeological and cultural heritage receptors. In reaching this conclusion, I have had regard to the cumulative impact of the Proposed Project and other renewable energy projects in the study area.

9.15. Landscape and Visual

9.15.1. Issues Raised

The planning authority, in Reason for Refusal No. 1, concludes disproportionate and adverse landscape and visual impacts on the Killeshin Hills LCA, individually and cumulatively, and raises concerns of scale, impact on landscape characteristics, and negative impact protected scenic routes and scenic viewpoints. Kilkenny County Council outlines very significant visual impacts in views from the west.

Landscape and visual concerns have been raised in observations including reference to scale, dominate landscape, visual pollution, destroy scenic views, amount of turbines cumulatively, insufficient photomontages from local area, and proximity to residential dwelling.

I have assessed the landscape policy context of the Killeshin Hill Landscape Character Area in Section 8.2 above, and I have not repeated this herein.

9.15.2. Context

Landscape and Visual is addressed in Chapter 14 of the EIAR and supplemented by Figures 14-1 to 14-16, Volume 2 Photomontage Booklet: Photomontages 1 to 15, and the following appendices

- Appendix 14-1: LVIA Methodology

- Appendix 14-2: Landscape Character Area Assessments
- Appendix 14-3: Photomontage Viewpoint Assessment Tables
- Appendix 14-4: LVIA Baseline Map
- Appendix 14-5 Photowire Visualisation Booklet

Chapter 13 addresses Cultural Heritage and Chapter 5 Population and Human Health. Description of the Proposed Project is set out in Chapter 4 and Appendices 4-1 to 4-8.

9.15.3. Baseline

The baseline for the landscape and visual impact assessment (LVIA) is set out in Section 14.4 Landscape Baseline and Section 14.5 Visual Baseline.

The site is noted to be located in an elevated upland area, on a plateau of gently undulating land which has limited topographic variation. The site is surrounded by irregular undulating topography, enclosed by ridgelines which extend around the site and its setting to the north. Dinin River is located to the north and the west of the site, and the site slopes gently towards the west. Landuse within the site is forestry and agricultural and is consistent with the surrounding area. The surrounding landscape is noted as being sparsely settled with clusters of residential dwellings, in a linear pattern along roads to the west and south and more scattered to the north and east.

The study area for **Landscape Character Areas** (LCAs) is 15km. The proposed Wind Farm site is located within the Killeshin Hills LCA and within the Uplands Landscape Type (LT) as per the Development Plan, Appendix VII Carlow County Landscape Character Assessment 2022-28. The Killeshin Hills LCA is identified as having a “moderate” capacity for wind farm development and the Uplands LT has a sensitivity rating of “5 – Most Sensitive”. Other LCAs within in the study area and where there is theoretical and actual visibility, include Central Lowlands in Co. Carlow and Castlecomer Plateau LCA within Co. Kilkenny.

The study area for **landscape and visual receptors** is 20km, and the following identified receptors were identified for further assessment, and corresponding Viewpoint (VP) or Photowires (PW) are provided in Table 14-14:

- Within 5km: scenic routes SR -6/-7/-8/-9 (Co. Carlow), scenic views V-31/-32 (Co. Carlow), settlements Oldleighlin and Ballinabrannagh, recreational routes 1798 Monument and Clogrennane Woods, and transport route M9.
- 5km – 10km: scenic routes SR -5 (Co. Carlow), scenic view V-13 (Co. Kilkenny), settlement Leighlinbridge, recreational routes Barrow Way, Milford Mill, and transport routes R448, R705, R723 and R724.
- 10 – 15km: scenic routes SR -4/-25 (Co. Carlow), scenic views V-28 (Co. Carlow) and V-12 (Co. Kilkenny), settlements Carlow Town, Tinryland, Castlecomer, Clogh, Netwon and The Swan, recreational route Brownshill Portal Dolmen, and transport routes M9 and N80.
- 15km – 20km: scenic views V-21/-23 (Co. Carlow), settlement Palatine, recreational routes Duckets Grove and Duckett's Grove gate lodge, and transport route M9.

Receptors excluded from further assessment taking account of theoretical and actual visibility are listed in Table 14-9, 14-10, 14-11, 14-12 and 14-13 of the EIAR.

The cumulative study area is 20km and identified wind farms are listed in Table 14-15. Wind farms located in or adjacent to Killeshin Hills include Gortahile Wind Farm (existing, 3.1km north), Bilboa Wind Farm (permitted, 1.2km northeast), White Hill Wind Farm (permitted, 2.1km southwest) and Freneystown Wind Farm (proposed, 8.3km southwest).

9.15.4. Likely Potential Effects

Table 9.9: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• No change to current landuse practices and landscape and visual baseline likely to remain largely consistent with that described in the EIAR. Likely to be future interest in developing this landscape for wind energy production given the permitted and proposed wind farms outlined.
Construction	• Earthworks, vegetation removal, construction activities: Short term slight negative effect in terms of landscape effects. • Incomplete turbines, large cranes/haulage vehicles: Short term slight negative effect in terms of landscape effects. • Other infrastructure: Mostly highly localised, and short term negative slight visual effects.

Project Phase	Potential Direct, Indirect and Cumulative Effects
Operation	• Landscape (site): Substantial magnitude of change will occur in localised areas of Low landscape value and sensitivity, long term direct landscape effects of Moderate significance. • Killeshin LCA: Proposed turbine are likely to be most visible from area within 5km, particular in upland plateau to the west of the site. Likely to change the visual and perceptual aesthetic of some areas in the Killeshin LCA. A Moderate magnitude of change, Medium sensitivity, and a likely Moderate effect on this LCA. • Other LCAs: Slight magnitude of change, Medium sensitivity, and a likely Slight effect on Central Lowlands and Castlecomer LCAs. • Photomontage VPs: • Within 3km: Long term direct visual effects of Moderate significance on VP1/VP2/VP3/VP14/VP15, effects (including residual effects) are Not Significant on VP3, and effects are **Significant** on VP1/VP2/VP14/VP15 with residual effects Not Significant. • 3km – 5km: Long term direct visual effects of Moderate significance on VP8. Long term direct Not significant visual effects on VP5. • 5km – 10km: Long term direct visual effects of Moderate significance on VP9. Long term direct Slight visual effects on VP7/VP12. Long term direct Not significant visual effects on VP4/VP6. • 10km – 15km: Long term direct Slight visual effects on VP10/VP11. Long term direct Not significant visual effects on VP13. • Scenic Amenity (within 5km): Scenic amenities with expansive views to the southeast and in the opposite direction of the proposed Wind Farm. Moderate visual effects on the scenic sensitivities SR-7/-8, views presented in VP2, VP14 and VP15. No significant visual effects on the scenic sensitivities of SR-6/-9, V31 & V32. • Scenic Amenity (Barrow Valley): The proposed turbines when viewed from the east are viewed above the horizon from the central lowlands and do not obscure landscape views. Slight visual effects on the scenic sensitivities of SR-5/-25, views presented in VP12 and VP11. No significant visual effects on SR-4. • Scenic Amenity (west): Moderate visual effects on the scenic sensitivities V-13, represented in VP9. Slight visual effects on the scenic sensitivities of V-12, represented in VP10. • Settlements: Slight visual to not significant visual effects. • Recreational: Slight visual to not significant visual effects. • Major transport routes: Not significant visual effects or limited visibility. • Residential receptors: No significant visual effects are deemed to arise from residential visual amenity in the landscape surrounding site. Moderate residual visual effects are likely to occur for approximately 13 No. residential receptors on the L3101 to the west of the site and approximately 6no. residential receptors to the north. No significant effects are likely to arise for residential receptors to the northeast, east and south. • Other infrastructure: Mostly localised, and long term slight visual effects.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• Turbine range: Irrespective of the turbine range used, the determination of likely significant residual visual effects are not altered. VP 14 and 15 used as representative viewpoints.
Decommissioning	• Similar to those occurring during construction.
Cumulative	**The Proposed Project:** • No significant in-combination construction landscape and visual effects predicted. No operational and decommissioning in combination effects. **Other developments:** • Cumulative landscape effects: The assessment determines that the upland area has the capacity to absorb additional wind energy development, no significant cumulative landscape effects predicted. • Cumulative visual effects: Cumulative visual effects are accounted for in the magnitude of change and in the residual visual effect for each visual receptor and viewpoint. No significant simultaneous or successional residual cumulative visual effects as a result of the proposed development.

9.15.5. Mitigation

The design itself is an embedded mitigation measure. Construction activities to follow best practice methods and mitigation measures as detailed within the CEMP, Appendix 4-4. Enhancement activities such as the planting of approx. 3,350m of native broadleaf trees, shrubs and hedgerows are detailed within BEMP, Appendix 6-4.

9.15.6. Residual Effects

No change in predicted effects which are residual, and which remain Moderate to Not significant on the immediate and wider study area, and not significant.

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

I have examined, analysed, and evaluated Chapter 14 of the EIAR, all of the associated documentation and submissions in respect of landscape and visual amenity. I have inspected the application site, the surrounding area, the viewpoints referred to in the Photomontage Viewpoint Assessment Tables (Appendix 14-3) and the associated the associated photomontages (Volume 2 Photomontage Booklet: Photomontages 1 to 15). I have also had regard to landscape character and

sensitivity as set out in the policy framework in the Carlow County Development Plan and the sensitive receptors identified in this. I am satisfied that the applicant understanding of the baseline environment, by way of desk and site surveys, is comprehensive and that the key impacts in respect of likely effects on landscape and visual amenity, because of the proposed development have been identified.

In light of the planning authority's Reason for Refusal No. 1 and noting issues raised in submissions and observations in respect of landscape and visual, I address the following below:

- Landscape Sensitivity
- Turbine Dimensions
- Viewpoint Selection
- Visual Effects (5km Study Area)
- Visual Effects (Beyond 5km)

Landscape Sensitivity

The planning authority disputes the assignment of a low value and low sensitivity to the local landscape in the LVIA given its location within the Killeshin Hills LCA. Furthermore, the planning authority notes that the site is an unbroken area of upland which is highly visible and informed by small to medium scale fields. I note the planning authority has not queried the methodology provided in EIAR, Appendix 14-1.

The LVIA determines the landscape value of the site to be Low with a Medium susceptibility to change and an overall sensitivity of Low reflecting the modification of the land and absence of specific landscape receptors of high sensitivity. The LVIA selects the Transitional Marginal Landscape as the most representative character type from the 2006 Guidelines (no change in the Draft 2019 Guidelines). The LVIA determines the sensitivity of the Killeshin Hills LCA to be Medium. The LVIA further notes that the operational Gortahile Wind Farm as well as permitted White Hill Wind Farm and Bilboa Wind Farm are all located within the Killeshin Hills. I note the CDP Appendix VII, Landscape Character Assessment identifies the Killeshin Hills as an "almost entirely a rural agricultural landscape with a moderate level of sensitivity and

moderate potential capacity to absorb different types of development." Increased sensitivity is noted for the east-facing slopes and in areas of more exposed views.

Having visited the site, I concur with the LVIA that the landscape within the site and in the immediate surroundings is predominately modified, containing farmlands and blocks of forestry, and I found it to be generally contained. I note the topography is generally level within the plateau which continues towards the north, west and southwest with minor valleys providing undulation but there are no major ridges. The site is located in proximity to the eastern edge of the uplands landscape towards the Barrow Valley. No specific landscape receptors of high sensitivity or unique characteristics within the site have been identified (scenic amenity receptors are addressed in the visual effects sections below). Furthermore, I accept the landscape methodology that there can be local variations in landscape receptors which can merit small scale assessment. I am, therefore, satisfied that a Low landscape sensitivity of site and its immediate setting has been sufficiently demonstrated within the LVIA, and a landscape sensitivity of Medium is appropriate for the Killeshin Hills LCA which is identified to have Moderate landscape sensitivity in the Landscape Character Assessment (Appendix VII). I also consider the precedent of operational and permitted wind farm developments within the Killeshin LCA/Castlecomer plateau to be a relevant factor when considering the susceptibility for change in determining the landscape sensitivity. Based on a Substantial magnitude of change for the site and a Moderate magnitude of change for the Killeshin LCA, the LVIA concludes Moderate landscape effects on both and Not Significant. In my view, the LVIA have sufficiently demonstrated that the upland landscape of the Killeshin LCA has the capacity to absorb the proposed Wind Farm, individually and cumulatively, without resulting in significant effect on the character of the landscape. I have addressed visual effects in the following section.

Turbine Dimensions

The planning authority has noted that the visual assessment has allowed for the maximum tip height and the maximum hub height but not the maximum rotor diameter. I note the applicant's response in the Appeal Submission which refers to Section 14.1.3.2 of the LVIA. The selected range is noted to show the greatest extent of the entire turbine structure and likely to increase the visual prominence of

turbines and is considered to represent a precautionary scenario for likely significant landscape and visual effects. The maximum rotor diameter (155m) was modelled in viewpoints 14 and 15, the closest ones to the proposed turbines. The applicant refers to Section 14.7.3.4 of the EIAR which concludes that there is barely a discernible difference between the two rotor diameter ranges (150 and 155m). Furthermore, it was noted that irrespective of turbine range used the determination of likely significant residual visual effects will not be altered. I have reviewed Viewpoint 14 and 15 and would concur with this conclusion, and I am also satisfied that the maximum tip height combined with maximum hub height is the combination that shows the greatest extent of the entire turbine.

Viewpoint Selection

The planning authority notes that there are no direct views of turbines T03, T04 and T05. Observations have raised concerns that there are insufficient photomontages representing views within the immediate local area. The applicant's Appeal Submission notes that VP1 provides a direct view of T03, and that the local roads near T03, T04 and T05 are not representative of High sensitivity receptors.

In my view, and having visited the site and driven the surrounding local roads, I find that the five photomontage viewpoints (VP1/VP2/VP3/VP14/VP15) from the local road network, at a distance range of 0.85km to 2km to the nearest proposed turbine, providing views from the east, south, west and north, are sufficiently representative of immediate local views and visual receptors. Furthermore, these viewpoints are supplemented by a further six photowire viewpoints (PWVP) in Appendix 14-5, at a range of 0.9km to 3.2km from the nearest proposed turbine (PWVP -A/-B/-D/-I/-J/-P). I am, therefore, satisfied that the potential operational visual effects within the local area as a result of the proposed Wind Farm has been adequately demonstrated and can be clearly understood. I do not consider that additional viewpoints based on proximity to turbines from local roads, and with no high sensitivity receptors, as indicated by the planning authority would necessarily add to the visual assessment. The route screening analysis submitted by the applicant provides a useful tool in understanding the screening provided by roadside vegetation when travelling in close proximity to the site and as a result, the intermittent visibility of the proposed

turbines. Having travelled the local roads, I can confirm that open and partial views from the local roads towards the site are intermittent.

Visual Effects (5km Study Area)

The Commission will note the planning authority include visual receptors Scenic Routes 6, 7, 8 and 9 and Scenic Views 31 and 32 within Reason for Refusal No. 1. In addition, the planner's report concludes significant cumulative visual impact on effects from L3037, L3037-2, L7123, and concludes that significant cumulative visual effects are demonstrated in viewpoints VP01/VP05/VP08/VP14/VP15. Observations have raised concerns relating to scale of turbines and visual impacts within the local area.

I note from the theoretical visibility of the immediate local area that this indicates that when one proposed turbine is visible then all seven proposed turbines are likely to be visible (Figure 14.1). Furthermore, it indicates that the proposed Wind Farm will be visible within a cumulative wind farm context and that there are very few locations where only the proposed Wind Farm development will be visible, and as such, it will largely be visible within the existing operational and permitted cumulative wind farm baseline.

Local views (from the west and southwest): I note VP14 and VP15 overlaps with Scenic Route 7 and present elevated close up open views from the L3037 to the west. PWVP-A and PWVP-B detail screened views from The Butts and Ridge Cross. VP3 represents views from an elevated position further west (c. 2km) and looks across the valley towards The Butts. PWVP-D is taken from the upland landscape to the southwest at a distance of 3km, and views are screened by forestry. VP5 from the outskirts of Oldleighlin, shows that the rising topography largely screens the proposed turbines limiting views to the hub and blades of T05 and intermittent visibility of the blades other turbines. PWVP-P, which is taken further up the road, shows the proposed turbines fully screened given the rise in topography and vegetation screening.

In note the L3037 slopes towards the north and the crossroads at The Butts. In views from the west, Gortahile Wind Farm is likely to be visible on the ridge line to the north and Bilboa Wind Farm is permitted to the left of view, in the intervening background

landscape. White Hill Wind Farm is located in the opposite direction and not likely to be visible. Having driven the route, I concur with the LIVA that open views towards the east are intermittent due to roadside screening and more likely to be gained in elevated locations towards the south and that the views are of no more than a medium range. I also note that there are intermittent views towards the river valley in the northwest when on the downward slope towards The Butts. Moving further west (VP3) across the local valley of River Coolcullen, the area is more sparsely settled, and the proposed turbines are noted to appear more setback and visible above the horizon. The LVIA finds that most residential receptors to the west and south will experience screened views from roadside vegetation and/or townlands (PWVP-A/-B). A small number of residential properties (approximately 13 no.) located along the L3037 will experience primary views that are similar to those presented in VP14 and VP15. Similar views will also be experienced when travelling along, Scenic Route 7 (Road to The Butts), although the attribute of this route is noted to be panorama across central plain. The proposed turbines are not located within the central plain, and as outlined in the LVIA, the central plain is not visible from this route.

Scenic View 31 (Ridge Cross) and Scenic Route 6 (L7123-0, Ridge Cross Road) are associated with the eastern edge of the upland landscape, and as such designated for their views east and southeast towards the central plain and Blackstairs. I note the planning authority considers that the scenic amenities are not necessarily limited to their description, however I find this to be somewhat inconsistent with the methodology of the Landscape Character Assessment (Appendix VII) which defines the interest for which a view is designated to relate to the visibility of an identified specific and unique landscape. Furthermore, the assessment clearly details that the output is *"a list of important views, vistas and scenic routes with an accompanying description of their precise location, extent, and orientation, and their particular attributes."* In the case of both Scenic View 31 and Scenic Route 6, views within the adjacent upland landscape, predominately forestry, do not form part of the designated features which, as noted above, are views towards east/southeast. I note the applicant's Appeal Submission referencing the route screening analysis with the LVIA which indicates limited views towards the proposed turbines along this Scenic Route. I further note that permitted Bilboa Wind Farm is located due north of this route.

The LVIA, after taking into account mitigation factors as outlined in Appendix 14-3, concludes a reduced residual visual effect of Moderate and Not significant on VP14, VP15, Scenic Route 7 and approximately 13 no. residential properties. Having regard to the methodology (Appendix 14-1) and the mitigation factors (Appendix 14-3), I consider the visual effects on VP14 and VP15 to remain Moderate and Significant and that the mitigation factors outlined does not merit a reduction in classification from these two viewpoints. As such, and in my view, the proposed turbines will also give rise to Significant visual effects to a small number of residential properties located along the L3037 given these are likely to experience primary views similar to those presented in VP14 and VP15. I am, however, satisfied that the potential for significant visual effects from the west of the site are highly localised and limited to specific locations along L3037. Furthermore, I am satisfied that the proposed turbines, for the reasons outlined above, will not result in significant visual effects on the scenic sensitivities of Scenic View 31, Scenic Route 6 and Scenic Route 7, or from the southwest of the site.

Local views (from the east and northeast): The LVIA notes that residential properties are more scattered to the east and northeast, and that the majority are located beyond the ridgeline on the downslope of the Barrow Valley and that residential properties located closer to the proposed turbines are also likely to have their main views towards the southeast and east. Having driven the local roads, I find this to be generally an accurate reflection, and I also consider VP5, and PWVP-P as noted above, to be representative of localised views downslope of the proposed turbines from the east. I note that Scenic View 32 (L7123, Tuolocreen Cross) and Scenic Route 8 (L7130-23) and 9 (L3041-19) are all located within the eastern ridge of the Killeshin Hills and with featured views orientated southeast/south across the central plain to Blackstairs, similar to Scenic View 31 and Scenic Route 6 as noted above. The proposed turbines are located to the west or the southwest of these scenic amenities. Views to the west and north of Scenic View 32 are short range given existing roadside vegetation, forestry and topography. I note VP1 is taken from Scenic Route 8, and orientated southwest towards the proposed turbines, detailing a more elevated view across the proposed Wind Farm. I noted during my drive that there is extensive roadside screening along this Scenic Route. White Hill Wind Farm would be visible in the background and Bilboa Wind Farm located to the north, is

likely to be screened. Continuing along the ridgeline to the northeast, PWVV-D, which is located on Scenic Route 9, shows how the topography to the west screens the proposed turbines.

Having regard to the above, I concur with the LVIA that the residual visual effects on VP1 is Moderate and Not Significant and that the proposed turbines are not predicted to give rise to significant visual effects on visual receptors located to the east and northeast including Scenic Routes 8 and 9 and Scenic View 32.

Local views (from the north): VP2 is a short range view taken from the local road in proximity to residential receptors located to the north and within 1km of the nearest proposed turbine. The view is not elevated, so intervening vegetation provides more screening of turbine towers, and the turbines are clustered with T01 more prominent. Bilboa Wind Farm is permitted to the northeast. I generally concur with the LVIA that residential properties to the north will have limited viewed south due to topography and screening, and also that many of these are focused north towards the more expansive views across the River Dinin valley. As such, I accept the reasoning within the LVIA that views from residential properties are likely to be more screened than the view in VP2. There are, however, a few residential properties, due to the rise in topography, that are located in more elevated position and have primary views south towards the proposed Wind Farm.

Elevated views from the north across the local valley of the River Dinin are shown in PWPV-J at a distance of 2.5km from the nearest proposed turbine and from VP8 adjacent to Gortahile Wind Farm at a distance of 3.6km from the nearest turbine. VP8 is from a sparsely settled area, the proposed turbines appear setback, clustered and above the horizon to the south. In addition to the proximity of Gortahile Wind Farm, Bilboa Wind Farm is visible in the foreground and White Hill Wind Farm is visible as a separate cluster to the right of the view.

Having regard to the above, a small number of residential properties in an elevated position, located to the north (within c.800m), and which have primary views towards the proposed turbines are likely to experience Significant visual effects. I concur with the LVIA that the residual visual effects on VP2 and residential properties represented by this view are Moderate and Not Significant, and that the visual effects on VP8 are Moderate and Not Significant.

Visual Effects (beyond 5km)

Beyond the 5km study area, the planning authority's concerns relate predominately to views from the east and Reason for Refusal No. 1 includes Scenic Routes 4 and 5 and Scenic Views 27, 28, 33 and 34. The planning authority concludes that significant cumulative visual effects are demonstrated in viewpoints VP04/VP06/VP09/VP12. Kilkenny County Council notes very significant visual effects from VP03 and VP09, but have raised no visual impacts concerns relating to Co. Kilkenny scenic amenity locations, V13 and V11 given their orientation away from the proposed Wind Farm.

Views from the east (including southeast/northeast): Considering views from the east, southeast and northeast, the LVIA concludes a Slight magnitude of change on visual receptors located beyond 5km from the proposed turbines to the east and southeast, reflecting distance, low level of change in view and similar to baseline situation as per the methodology in Appendix 14-1. The planning authority sets out that the Killeshin Hills form an important backdrop and landmark feature when viewed from the east, and approach from south and north, and that the proposed turbines will be highly visible from the lowland area and that large portions of the wider county will be informed by the proposed turbines. VP12 (approximately 9.3km distance) provides an elevated view and coincides with Scenic Route 5, which feature is described as a "mixed landscape view west" in the Landscape Character Assessment (CDP, Appendix VII). I note all of the proposed turbine hubs are visible above the ridge, similar to permitted White Hill Wind Farm and Bilboa Wind Farm. I further note that the proposed turbines appear fully contained within the visual envelop of permitted turbines along the ridge. The proposed turbines appear linearly spaced, and I note they could appear as a continuation of White Hill Wind Farm. The proposed turbines are visible at a distance, and having driven the route, I find they would appear sufficiently remote and beyond the view of the valley in the foreground. I find the visual effects of the proposed turbines from VP6 from the M9 further northeast to be largely similar to VP12 and at a similar distance. Scenic Views 27 (South of Nurney) and 28 (Newtown) are also located in elevated positions on the

eastern side of the Barrow Valley, but at a greater distance from the proposed turbines than Scenic Route 5 and VP12.

From the southeast, I note VP4 is located in an elevated vantage point position within Leighlinbridge and the proposed turbines, similar to the more elevated views from the east as described below for VP12, will appear above the ridge, similar to permitted White Hill Wind Farm and Bilboa Wind Farm and at a distance given the intervening topography. I note PWPV-E is more representative of the urban context of Leighlinbridge where views are screened. PWPV-O (R3037/M9) to the southeast shows a similar composition in view to VP4. Scenic View 34 (Muine Bheag) is north of Bagelstown, and the feature of the view is south and of the town along the River Barrow. VP7 shows the view towards the northwest from this location, and I note that most of the proposed turbine hubs are visible above the horizon and at a distance, and that cumulative effects from White Hill Wind Farm and Bilboa Wind Farm are screened by existing vegetation. An alternative view is provided in PWVP-L. I am satisfied that the proposed turbines do not feature in the view south, and that within the extend view north along the River Barrow, the proposed turbines are a feature in the distance within the uplands.

I note the visual cumulative composition changes when view from the northeast, with VP13 (Brownshill Portal Dolmen) and PWVP-H (Scenic Route 4) located east of Carlow Town, detailing a more clustered cumulative composition of the proposed turbines and White Hill Wind Farm which is largely screened by intervening topography and vegetation.

Having regard to the above, the methodology (Appendix 14-1) and the precedent set by the operational and permitted cumulative wind farm, I consider the visual effects as a result of the proposed turbines when viewed from the east, northeast and southeast to be Not Significant. Furthermore, I do not consider the addition of the proposed turbines to views from the east/southeast/northeast to be significant when viewed in combination with the operational and permitted wind farms.

Views from the west/southwest: I note VP9 is located to the southwest within Co. Kilkenny and at the edge of the theoretical visibility in this direction as a result of the proposed turbines. White Hill Wind Farm is permitted in the foreground from this view with Bilboa Wind Farm featuring in the background, and the proposed turbines

will be situated between the two. Operational Gortahile Wind Farm is further setback, to the north and screened in the view. When compared with White Hill Wind Farm, I find that the proposed turbines will appear as a smaller cluster in the background and a potential visual extension of Bilboa Wind Farm. The cumulative view is cluttered mainly due to the composition of White Hil Wind Farm in the foreground and the depth of turbines in the view, however I note the majority of turbine towers appear individually spaced which I find assist with the composition of the view as well as the intervening vegetation which provides screening. VP9 coincides with Co. Kilkenny Scenic View 13 which is noted for featuring views to the southwest and southeast, and Kilkenny has raised no concerns. Having regard to this and the methodology (Appendix 14-1), I do not consider that the visual effects of the proposed turbines to be Significant from this view nor do I find the addition of the proposed turbines to this view to be significant when considered against the already permitted cumulative baseline of this view.

Having regard to the above, I concur with the LIVA that the visual effects on visual receptors as a result of the proposed Wind Farm, individually or in combination with operational and permitted wind farms, are Not Significant beyond the local 5km study area.

9.15.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential effects on landscape and visual receptors as a result of the proposed Wind Farm have been avoided imbedded design mitigated measures. Having regard to the landscape, I consider the landscape effects as a result of proposed Wind Farm on the local landscape and on the wider Killeshin LCA including the Killeshin LCA's Upland Landscape Type to be not significant. I consider the additional effects on the landscape as a result of the proposed Wind Farm in combination with Gortahile Wind Farm, Bilboa Wind Farm and White Hill Wind Farm not to be significant, and that there is capacity within the landscape to accommodate the proposed Wind Farm when considered within the landscape context of operational and permitted wind farms. I consider significant visual effects as a result of the proposed Wind Farm will be experienced by a small number of residential

properties, located directly west and north (within c. 800m), and where these have elevated primary views of the proposed turbines. Other visual receptors will not experience significant views on the basis of, or a combination of, no or limited views, orientation of views, composition of views, designated attributes, distance and intervening landscape or on the basis of the proposed Wind Farm when viewed in combination with existing operational and/or permitted cumulative wind farm baseline within the Castlecomer plateau/Killeshin Hills.

Having regard to the above, the applicant's LVIA and taking account of the CDP policy LA P7 and Appendix VII, Landscape Character Assessment and for the reasons outlined in Section 8.3 above, I do not consider the proposed Wind Farm contrary to landscape policies LA P1, LA P2, LA P3 and LA P11 as outlined in the planning authority's Reason for Refusal No. 1.

On balance, based on National Policy supporting renewable energy (see Section 6.0), I consider that the potential benefits associated with renewable energy generation including wind energy within the context of a climate emergency, outweigh the potential perceived adverse visual impact for a small number of residential receptors. I am therefore satisfied, that the proposed Wind Farm would be consistent with the Climate Act and National Policy in support of renewable energy and a refusal of permission would not be warranted on the basis of residual landscape and visual effects.

9.16. Material Assets

9.16.1. Issues Raised

The planning authority's Reason for Refusal No. 2 relates to traffic and transportation matters. Kilkenny County Council outlined that the impact on road network during delivery and construction was not entirely clear including cumulative impacts. Observations have raised concerns relating to damage to roads and whether roads can accommodate the traffic.

9.16.2. Context

Material Assets is addressed in Chapter 15 and Appendices 15-1 to 15-6 of the EIAR. Chapter 4 sets out the Description and Appendices 4-4 (CEMP), 4-6 (Black Bridge Structural Assessment) and 4-7 (Grid Connection Construction Methodology).

9.16.3. Baseline

Traffic and Transport, Section 15.1.

- The main **site access** (Access Junction A) for the proposed Wind Farm, both construction and operation phases, is via the L3037 (Figures 15-2a and 15-2c). Upgraded junction design and visibility display in Figure 15-11 and Figure 15-12 (auto track in Figures 15-13 and 15-14). A second access/crossing (Access Junction B) is proposed off the L30372. Access junction B will facilitate the crossing of construction traffic between the northern and southern part of the site, there will be no construction traffic permitted to access the site via the L-30372 at the proposed junction. The crossroads junction design and visibility display are shown in Figures 15-16 and 15-17 (auto track in Figures 15-18 and 15-20).
- The **proposed turbine delivery route** is described in Section 3.0 above, from Waterford Port via the N29, N25, N9, M9, N78 and L1834/L1835/L3037 to the proposed Wind Farm site entrance off L3037Site (Figure 15-1). Accommodation works proposed along the route includes permanent strengthening works to Black Bridge (L1835/L3037), and the southern approach to this bridge is located within Co. Carlow. Accommodation works within Co. Kilkenny includes a temporary one-way access road adjacent to the N78/L1831 junction.
- The Proposed Project's **construction haul route** for the supply of concrete and stone is anticipated to be from the east and south, such as Kilcarrig Quarries Ltd. located north of Leighlinbridge in Co. Carlow (Figure 15-2a) and via the R448/L3037. General construction materials are anticipated to follow the turbine delivery route via the existing N78/L1834 junction to the proposed Wind Farm (approach from north) and the route north of Leighlinbridge (approach from south).
- **Traffic counts** for the construction haul route and turbine delivery route were undertaken at junctions N78/L1834 and R448/L3037 (EIAR, Appendix 15-1).

Telecommunications and aviation, Section 15.2.

Summary of potential telecommunication constraints identified from consultations:

- Enet - core wireless link overlaps with T01.
- Vodaphone – three links identified in the area, but no overlap with proposed turbine locations.

Summary of potential aviation constraints identified (including retails in Aviation Impact Assessment, Appendix 15-6):

- Nearest airport and airfield, Kilkenny Airport (20km southwest) and Kilrush Airfield (36km northeast).
- Nearest aerodrome, Kilkenny Aerodrome, Holdenstrath (20km southwest).
- M9, critical low flying route with 3 Nautical Miles (NM) buffer zone, the site lies within the Military Operating Area (MOA) 3.

Other Material Assets, section 15.3

- No known existing utilities within the proposed Wind Farm site. There are existing utilities including overhead lines, electricity cables, water supply, sewage, telecommunications present along the proposed grid connection route.

9.16.4. Likely Potential Effects

Traffic and Transport

The assessment identifies two main stages for the assessment of traffic generated effects, Stage 1 (groundworks, construction of temporary construction compounds, turbine foundations, met mast foundations, onsite 38kV substation, BESS, internal electrical cabling and grid connection route) and Stage 2 (turbine delivery and construction. Works with Co. Kilkenny (grid connect route and turbine delivery route accommodation works) are included in Stage 1.

The assessment assumes maximum construction vehicles using a single route to/from the proposed Wind Farm and have applied this to both haul routes listed above. The estimated overall construction period is 18-24 months, the assessment has applied the shortest period of 18 months which gives rise to higher volume of construction traffic.

Stage 1: Over 11 months (357 days) 9,764 HGV deliveries will be made to the Proposed Project. This includes 5,040 HGVs for the delivery of stones and 2,814

HGV deliveries associated the grid connection route (includes Co. Kilkenny). Concrete pouring for the 7 foundations is anticipated to take place over seven days, generate 80 concrete loads per foundation per day.

Stage 2: 56 abnormal load (8 per turbine) and 28 HGV delivery trips are anticipated. Abnormal load deliveries will take place at night at a rate of 3 per 24-hours across 4 week period.

Also noted, estimated construction programme for the grid connection route in Co. Carlow is 19 days, anticipated daily length of 100-150m and stop-go for L3037 and road closure/diversion (Figure 15-7f) for L30372. 2 to 4 weeks for the proposed strengthening works to Black Bridge. Road closure with diversion is anticipated for 3 days at Black Bridge.

Table 9.10: Summary of Potential Effects

Project Phase	Potential Direct, Indirect and Cumulative Effects
Do Nothing	• No change to material assets. The opportunity to capture renewable energy and supply electricity to the national grid would be lost.
Construction	Traffic & Transport • Haul Route - Stage 1 (350 days, excluding concrete pouring, including grid connection route), +4.5% (N78) and +20.2% (L1834) increase in traffic volumes are forecasted when approaching from the north, and +2.1% (R448) and +7.0% (L3037) when approaching from the south. • Haul Route - Stage 1 (7 days, concrete pouring): +10.4% (N78) and +46.7% (L1834) increase in traffic volumes are forecasted when approaching from the north, and +4.9% (R448) and +16.2% (L3037) when approaching from the south. • Turbine Route - Stage 2 (19 days, turbine delivery): +2.4% (N78) and +10.8% (L1834) increase in traffic volumes are forecasted. • Turbine Route - Stage 2 (7 days, other deliveries): +1.5% (N78) and +6.6% (L1834) increase in traffic volumes are forecasted. • All links are forecasted to operate below capacity for all the above scenarios. • 10% threshold on L3037 only exceeded for the 7 days of concrete pouring so assessment of the L3037/R448 junction not required. • The junction capacity test (AM/PM peak hours) for N78/L1834/L5872 shows it is forecasted to operate well within the acceptable limits. • The junction capacity test for the proposed Wind Farm site access junction/L3037 shows it is forecasted to operate well within the acceptable limits. • Temporary, negative, slight effect on the haul routes and a slight to moderate negative effect due to vehicle sizes on the turbine delivery route.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	Telecommunications/aviation • No electromagnetic interference. Other Material Assets • Unlikely to impact on above or below ground built services or waste management.
Operation	Traffic & Transport • Staff/Maintenance trips limited and imperceptible effect on the local road network. Telecommunications • T01 interfering with ENET's core wireless link between Johnswell and HCN Rossmore Bog. Negative, moderate, long term effect. Aviation • AIA concludes: Low impact on airspace, general aviation and the IAC Activity with MOA 3. No change, modify, or cease of general flying activities within the MOA anticipated and the proposed Wind Farm being a substantial distance from the nearest dedicated low flying area. Moderate impact on the IAC 3NM Buffer Zone from Motorways. A minor restrictive clause may be required for its aircraft passing the proposed Wind Farm whilst following this particular piece of motorway. • The assessment identifies that airspace and civil and/or military aviation are not impacted to any degree that may be deemed unsafe or inconvenient to users. It is not envisioned that flight operations along this route would no longer be able to take place as a result of the proposed Wind Farm. Overall, negative, moderate, long term effect on aviation. Other Material Assets • No operational phase impacts on waste management. • Produce 129,507 MWh of electricity, positive moderate, long term effect on built services.
Decommissioning	Traffic & Transport • Similar to when turbines are being erected. Significant ground works not required, and traffic volumes significantly less. Telecommunications/Aviation • No electromagnetic interference. Other Material Assets • Similar, but to a lesser extent than construction.
Cumulative	**Traffic and Transport** - The Proposed Project: • Construction Stage 1, haul route assessment as above. The diversions for the grid connection route does not impact on the haul route. • Construction Stage 2 turbine construction/delivery, no potential for in combination effects based on construction programme.

Project Phase	Potential Direct, Indirect and Cumulative Effects
	• No in combination effects at operation and decommissioning. **Traffic and Transport** - Other developments • In the event construction coincides, potential for negative, short-term slight to moderate cumulative effects based on traffic generation and turbine delivery routes. No significant effects predicted, but scheduling of construction where possible to avoid other permitted wind farms (White Hill and Bilboa). **Telecommunications/Aviation**: • The Proposed Project - No in combination effects. • Other developments – No cumulative effects relating to telecommunications and aviation. **Other Material Assets**: • The Proposed Project - No in combination effects. • Other developments – Potential negative, imperceptible, short term cumulative impact on built services and waste management from overlapping grid connection route projects.

9.16.5. Mitigation

Measures included in CEMP (EIAR Appendix 4-4).

Traffic and Transport:

- By design, minimum accommodation works for the turbine delivery route and shortest underground grid connection route.
- Traffic Management Plan (EIAR Appendix 15-2).
- Construction methodology for the proposed Grid Connection Route is set out in EIAR Appendix 4-7 and RFI Appendix 9.
- Pre-construction and post-construction condition surveys.
- Temporary traffic signs in accordance with the Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works and Guidance for the Control and Management of Traffic at Roadworks.
- Works to the public road will be subject to Road Opening License (ROL) which will cover both detailed surveys prior to and during the construction.
- Liaison with area engineers within local authority.

- The Waste Management Plan (WMP) outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction, included in CEMP (EIAR Appendix 4-4.

Telecommunications/Aviation:

- Mitigation measures proposed by ENET, and agreed with applicant, to decommission existing Johnswell and HCN Rossmore Bog link, and build 2 no. new core wireless links.
- Best practice measures for aviation will be adhered to during the operational phase, including lighting requirements and coordinates and elevations for built turbines will be supplied. In advance of construction, crane erection details will be agreed.

Other Material Assets:

- Works to the public road will be subject to Road Opening License (ROL) which will cover both detailed surveys prior to and during the construction.
- Liaison with area engineers within local authority.

9.16.6. Residual Effects

- **Traffic and Transport:** The residual traffic effects as a result of the proposed Wind Farm, and in combination with the Proposed Project, are predicted to be temporary, negative, slight to moderate during the construction phase. Imperceptible residual effect during operation predicted and slight to imperceptible effect during decommissioning.
- **Telecommunications/Aviation:** No residual effect on telecommunication signals. A negative, slight, long term residual operational effect on aviation. No significant effects.
- **Other Material Assets:** Negative, imperceptible short term residual construction effects, not significant.

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

The Commission will note Refusal Reason No. 2 relate to traffic concerns raised by the Council's Transportation Department in their submission. I have addressed these below.

Local Road Network Capacity and Design

The Council's Transportation Department have raised concerns regarding the adequacy of the local road network in terms of capacity and design to accommodate the proposed Wind Farm, and that the same has not been satisfactorily demonstrated within the application. Clarity on impact on the road network is also sought by Kilkenny County Council. Observations have raised concerns regarding potential damage to the road.

The haul route for the construction traffic is along national or regional roads with higher level of background traffic and along local road L1834/L1835/L3037 with low level of background traffic. I note link capacity assumed in the assessment are based on road types and widths as set out in the TII Standards, and Type 3 Single (6.0m) carriageway (5,000 PCU) have been applied to L1834/L1835/L3037 and I note the Council's Transportation Department has not queried the adopted link capacities in the assessments. The applicant in the Appeal Submission outlines that this road network provides for two-way traffic with grass verges. I further note that the construction haul routes do not overlap with the grid connection routes. There will be no construction traffic access via the L30372 or the L7123, and the applicant has reconfirmed this in the Appeal Submission. Local road diversions via L7123 are proposed for the L30372 during the installation of grid connection route (c. 19 days) and I note local access to dwellings will be maintained as outlined Appendix 4-4 (CEMP) and Schedule of Mitigations (Chapter 18). The turbine delivery route and the site entrance along L3037 have been auto tracked, and where works are required, this have been identified and assessed. As set out above, the minimum 18 months construction programme and maximum construction vehicles for the Proposed Project using a single route were assumed for the assessment to give rise to higher traffic volumes. The applicant has demonstrated the capacity of the identified link roads and junctions to accommodate the construction traffic.

The applicant has outlined in the Appeal Submission that abnormal loads are not abnormal in terms of their weight and are all within the acceptable national limits (EIAR, Table 15-1). Furthermore, that the construction traffic will otherwise comprise of standard HGVs, trucks and cement mixers and that all of these are currently in use on the L3037/L1834/L1835 local road network. The applicant notes that is as such, expected that the existing local road network to/from the proposed Wind Farm

site and the grid connection route should be capable of providing for standard HGV deliveries, and noting the mitigation measures include for pre- and post-construction condition surveys to inform any repairs needed.

Therefore, I am satisfied, taking account of mitigation measures, that the applicant has satisfactorily demonstrated adequate capacity in the local road network to accommodate the volume and the frequency of construction traffic generated by the Proposed Project. Furthermore, I concur with the applicant the local road network already accommodates standard HGVs and as such, should be capable of accommodating the construction traffic associated within the Proposed Project. As per mitigation measures proposed, the applicant will be carrying out both pre- and post-road condition surveys which will provide a degree of condition oversight and a mechanism for roads repair/resurfacing works where required.

Black Bridge

The Transportation Department notes that Black Bridge is located on the boundary between Co. Carlow and Co. Kilkenny and that it would not be appropriate to grant the strengthening works in the absence of a full structural assessment. The planning authority refers to the bridge as being located within Co. Kilkenny. As previously noted, the planning boundary includes the southern approach to Black Bridge along L3037. The applicant's Appeal Submission reiterates that the strengthening works proposed to Black Bridge are the same as those approved for White Hill Wind Farm (315365-22). I note Appendix 4-5 presents a visual inspection of the bridge and an assessment of the masonry arch using the modified MEXE method in accordance with BA 16/97 The Assessment of Highway Bridges and Structures. This method is also the recommended approach for masonry arches within TII's The Assessment of Road Bridges and Structures (2014). The applicant's Appeal Submission notes that the structural assessment report is the same as the one submitted for the White Hill Wind Farm, and assessed as sufficient for planning stage. Having reviewed the assessments submitted, I am satisfied that the structural assessment submitted for Black Bridge generally accords with the initial assessment requirements of relevant guidelines which are aimed at providing a conservative assessment output. A more detailed structural assessment in accordance with TII's guidelines should be conditioned in the event the Commission is minded to grant consent.

Road Safety and Obstruction of Road Users

The applicant's Appeal Submission includes a Stage 1 Road Safety Audit which identifies two issues, relating to the temporary access onto the L1834 and crossing of drain in Co. Kilkenny and sightlines at the main site access (Access Junction A), and which both have been address to the satisfaction of the auditors. The applicant confirms that the sightlines for the site entrance are detailed on Figure 15-12 and will be kept clear during both construction and operational stages.

As outlined above, I am satisfied that the applicant has satisfactory demonstrated the adequacy of the capacity and design of the local road network to accommodate the construction traffic. I further note the abnormal loads will take place during night time and under Garda escort. Road diversion for the grid connection route along L30372 has been identified and will be in place for an estimate 19 days with local access being maintained. I have driven the L30372 and note it mainly facilitates local access to farms, commercial forestry and a few residential properties with very low background traffic levels.

I am, therefore, satisfied that the road safety matters have been considered and that the proposed Wind Farm development, take account of mitigation measures detailed in the Traffic Management Plan, will not result in any undue obstruction of road users.

Cumulative Traffic

I note the Council concerns relating to cumulative construction traffic and timing of construction, and matters relating to Black Bridge and White Hill Wind Farm. I note the Applicant's response to the matter in the Appeal Submission, and the varying timelines of the proposed development and permitted wind farms, the role of the Council in agreeing haul routes, road closures and any Road Opening Licence (ROL) requirements, and I am, therefore, satisfied that the cumulative assessment as carried out in Section 15.1.14.7 of the EIAR is adequate.

Furthermore, I do not concur with the Council's Transportation Department that there is a potential conflict between the proposed strengthening works to Black Bridge and the consented works to Black Bridge for White Hill Wind Farm. As outlined by the applicant in the Appeal Submission, the proposed works are the same as those

permitted for White Hill Wind Farm and I note the applicant is liaising with the developer of White Hill Wind Farm regarding the matter.

Aviation

I note the IAA have not raised any operational concerns and have requested standard aviation conditions relating to warning lights, provision of as built coordinates and 30 days prior notification of crane operations. In this regard, I am satisfied that a screening assessment of enroute communications, navigation and surveillance equipment relating to construction activities can be conditioned (see Section 8.7 above). No comments from the Minister of Defence was received at planning application stage and I am therefore, satisfied that the Aviation Impact Assessment (Appendix 15-6) has satisfactorily addressed the matter of the proposed Wind Farm and the 3NM buffer zone of the M9. As above, the as-built coordinates of the proposed turbines are noted as a mitigation within the EIAR, and a condition is requested by the IAA.

9.16.8. Conclusion: Direct and Indirect Effects

I have considered the application details and all other documentation on file including the EIAR, and all of the submissions and observation received in relation to the appeal. I am satisfied that potential effects on material assets as a result of the proposed Wind Farm would be avoided, managed and mitigated by the measures which form part of the Proposed Project, the proposed mitigation measures and through suitable conditions. I am therefore, satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative effects on the material assets.

9.17. Major Accidents and Natural Disasters

No issues have been raised by any party to the appeal in respect of major accidents and natural disasters in relation to the proposed Wind Farm. Peat stability, water contamination and impact on aviation have been considered as part of EIAR Chapters 8, 9 and 15 above, respectively.

I have examined Chapter 16 of the EIAR which deals with this topic. The proposed Wind Farm is not a recognises source of pollution and potential pollution sources onsite are limited and of low environmental risk. There is a low risk for significant natural disasters and are limited to issues such as flooding and fire given the stable geology and mild climate of Ireland. A full risk assessment to establish the likelihood and effect of any major accident or natural disaster has been provided and includes critical infrastructure emergencies, severe weather, flooding, utility emergencies, traffic incident, contamination, fire/explosion and collapse / damage to structures. The highest risk relevant to the proposed development is during construction and was identified as 'Contamination' and 'Fire / Gas Explosion'. Section 16.4.2 of the EIAR confirms that the Proposed Project will be designed and built in line with current best practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design. A Risk Management Plan is proposed and will ensure an effective response to disasters or the risk of accidents. The CEMP (Appendix 4-4) describes procedures and measures which will ensure that the risk of contamination is low. Furthermore, a fire safety risk assessment will assist in the identification of any major risks of fire. Conclusions on residual effects in relation to Chapter 9 as outlined above are of relevance, where I conclude that there will be no significant residual effects associated with potential contamination.

Having regard to the foregoing, I am satisfied that the potential risks to the proposed development should a major accident or natural disaster occur have been clearly identified, and I consider based on the risk assessment undertaken and the mitigation proposed that the Proposed Project has a low potential to cause natural or major accidents and that the Risk Management Plan and final CEMP can be dealt with by way of condition.

9.18. Interactions

Chapter 17 evaluates potential interactions between the various aspects of the environment assessed in this EIAR. It is noted that the potential for interaction of impacts has been assessed in detail in the individual chapters within the EIAR, and that potential negative impacts, where identified, have been avoided or reduced by design and the proposed mitigation measures. A matrix of the interactions is

presented in Table 17-1 and a summary of the assessment of potential interactions are provided in Section 17.2.

I have considered the interactions and interrelationships between environmental effects and am satisfied that significant impacts in relation to interactions can be avoided, managed and mitigated by the measures contained within the EIAR and any recommended planning conditions.

9.19. Reasoned Conclusions

Having regard to the examination of environmental information contained above, to the EIAR and the submissions received, the contents of which I have noted, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows.

- **Landscape and Visual:** Negative landscape and visual impacts arise during the operational phase of the proposed development given the placement of significant structures within the local landscape thereby changing the existing visual context. This will result in significant residual indirect and cumulative visual effects on a small number of residential receptors located in elevated positions to the west and north, within c. 800m, and which have primary views towards the proposed Wind Farm. Residual landscape effects on the site will be direct and not significant, and on the wider study area indirect, cumulative and not significant. Residual visual effects on other visual receptors will be indirect, cumulative and not significant.
- **Land, Soil, Geology, Air and Climate:** Taking account of mitigation measures to manage risk, a Low risk of peat slide has been demonstrated. Positive long term significant cumulative effect on climate as a result of the proposed development in combination with other wind farms due to reduced greenhouse gas emission from increased electricity generation from renewable sources.
- **Biodiversity and Birds**: The removal of linear habitats on site, including treelines and hedgerows will have local effects which can be mitigated through the delivery of mitigation measures including the Biodiversity Management and Enhancement Plan within the site. Negative local level effects on species and birds which are likely to arise in the construction or operational phases can be

adequately mitigated by measures and monitoring outlined in the application documentation and are not considered to be significant.

- **Water (including aquatic habitat and species)**: There will be no impacts on water connectivity or movement of fish or result in the loss of instream habitat. Negative effects on surface water and groundwater, and on aquatic species, habitat and downstream receptors which are likely to arise from potential release of sediments and other pollutants into watercourses can be adequately mitigated by measures outlined in the application documentation. The proposed development will not impede the ability of ground water and surface water bodies to achieve good or high status and the Water Framework Directive.
- **Noise:** Negative noise impacts arise during the construction phase of the proposed development will be short-term, temporary, transient and mitigated through the implementation of measures outlined in the planning application documentation. Operational noise levels, individual and cumulatively, can be controlled by noise limit condition and mode management mitigation measures.
- **Cultural Heritage:** Permanent changes to Black Bridge a Protected Structure will have a direct, moderate and not significant effect, and will be further mitigated through the implementation of measures outlined in the planning application documentation.
- **Material Assets**: Negative traffic effects arise during the construction phase of the proposed development, the road network has the capacity to facilitate this traffic, and effects will be mitigated through the implementation of a traffic management plan. Potential negative effects on telecommunication links and aviation, during operation can be adequately mitigated.
- **Population and Human Health**: Negative impacts on human health and population arising from construction and operation including noise, traffic and dust disturbance can be adequately mitigated by measures outlined in the application documentation. Long term positive moderate cumulative effects on the local area from employment and investment and from the displacement of CO^2 from the atmosphere arising from fossil fuel energy production.

The EIAR has considered that the main significant direct and indirect effects of the proposed development on the environment would be primarily mitigated by environmental management measures, as appropriate. Notwithstanding the foregoing

having regard to the pressing need to roll out alternative energy sources, it is considered that these effects are not sufficient to warrant refusing permission for the development and are acceptable.

10.0 Appropriate Assessment

10.1. Introduction

10.1.1. The requirements of Article 6(3) as related to Appropriate Assessment (AA) of a project under part XAB, section 177U of the Planning and Development Act 2000 (as amended) are considered fully in this section and Appendix 1 AA Stage 1 Screening Determination and Appendix 2 AA.

10.1.2. Please refer to Section 1.0 to 3.0 of this report for Background, Site Location and Description and Proposed Development.

10.2. Issues Raised in relation to the Appropriate Assessment

10.2.1. Planning authority and prescribed bodies raised no issues with the applicant's Appropriate Assessment, and mitigation measures were requested to be conditioned (see Section 4.0 and Section 8.7above). Appropriate Assessment related observations made to the appeal include consideration of pathway and impact on headwater and qualifying interest of the River Barrow and River Nore SAC and River Nore SPA, deficient sediment controls.

10.3. Screening Determination

10.3.1. My Appropriate Assessment Stage 1 Screening Determination is set out in Appendix 1, where I conclude as follows:

10.3.2. In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in the AA screening, it is not possible to exclude the possibility that the proposed development alone would result significant effects on European sites, River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) in view of the sites conservation objectives.

10.3.3. An appropriate assessment is required on the basis of the possible effects of the project 'alone'. Further assessment in combination with other plans and projects is not required at screening stage.

10.4. Appropriate Assessment Conclusion

10.4.1. My Appropriate Assessment (Stage 2) is set out in Appendix 2, where I conclude as follows:

In screening the need for Appropriate Assessment, it was determined that the proposed development could result in significant effects on the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) in view of the conservation objectives of those sites and that Appropriate Assessment under the provisions of S177U was required.

Following an examination, analysis and evaluation of the NIS all associated material submitted with application, and taking into account submissions on nature conservation, I consider that adverse effects on site integrity of the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) can be excluded in view of the conservation objectives of these sites and that no reasonable scientific doubt remains as to the absence of such effects.

My conclusion is based on the following:

- A full and detailed assessment, including information presented in the Environmental Impact Assessment Report and supplementary information submitted by the applicant, of the proposed development including proposed mitigation measures and water quality monitoring in relation to the conservation objectives of River Barrow and River Nore SAC and the River Nore SPA.
- Effectiveness of mitigation measures proposed including supervision and monitoring and integration into CEMP ensuring smooth transition of obligations to eventual contractor.
- Application of planning conditions to ensure application of these measures.
- The proposed development will not affect the attainment of conservation objectives for the River Barrow and River Nore SAC or the River Nore SPA.

11.0 Recommendation

It is recommended that the Commission **grant** planning permission for the proposed development for the following reasons and considerations and subject to conditions detailed below.

12.0 Reasons and Considerations

The Commission reached its decision in accordance with its duties under Section 15(1) of the Climate Action and Low Carbon Development Act 2015, as amended, and the requirement to, in so far as practicable, perform its functions in a manner consistent with inter alia the Climate Action Plan 2025 and the furtherance of the national climate objective.

And in coming to its decision, the Commission had regard to the following:

- European legislation, including of particular relevance:
  - Directive 92/43/EEC (Habitats Directive) and Directive 79/409/EEC as amended by 2009/147/EC (Birds Directive) which set the requirements for Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union.
  - EU Renewable Energy Directive 2009/28/EC which aims to promote the use of renewable energy and amending Directive EU/2023/2413 which aims to speed up the EU's clean energy transition as implemented by European Union (Planning and Development) (Renewable Energy) Regulations 2025 (S.I. 274 of 2025)
  - Directive 2011/92/EU (The EIA Directive) as amended by Directive 2014/52/EU as implemented by Article 94 and Schedule 6 (paragraphs 1 and 2) of the Planning Regulations as amended.
  - Directive 2000/60/EC, the Water Framework Directive and the requirement to exercise its functions in a manner which is consistent with the provisions of the Directive and which achieves or promotes compliance with the requirements of the Directive.
- National and regional planning and related policy, including:

- National policy with regard to the development of alternative and indigenous energy sources and minimisation of emissions from greenhouse gases, particularly the NPF First Revision 2025 and National Policy Objective 70.
- Wind Energy Guidelines: Guidelines for Planning Authorities 2006 and the draft guidelines published in 2019.
- The objectives and targets of the National Biodiversity Action Plan 2023-2030.

- Regional and local planning policy, including:
  - Regional Spatial Economic Strategy for the Southern Region 2020-2032;
  - Carlow County Development Plan 2022-2028.
- Other relevant national policy and guidance documents.
- The nature, scale and design of the proposed development as set out in the planning application and the pattern of development in the vicinity.
- The likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European sites.
- The reports of the Planning Authority and submissions received in response to same.
- The submissions made on the planning application to the Planning Authority and to the Commission in connection with the appeals.
- The report and the recommendation of the Inspector, including the examination, analysis and evaluation undertaken in relation to appropriate assessment and environmental impact assessment.

12.1. Appropriate Assessment Stage 1 Screening Determination

The proposed development was considered in light of the requirements of Section 177U of the Planning and Development Act 2000, as amended. Having carried out Screening for Appropriate Assessment, and on the basis of the information considered in this AA screening, it is not possible to exclude the possibility that the

proposed development alone would result significant effects on European sites, River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) in view of the sites conservation objectives. It is therefore determined that Appropriate Assessment of the proposed development is required.

12.2. Appropriate Assessment Stage 2 Conclusion

In screening the need for Appropriate Assessment, it was determined that the proposed development could result in significant effects on the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) in view of the conservation objectives of those sites and that Appropriate Assessment under the provisions of S177U was required.

Following an examination, analysis and evaluation of the NIS all associated material submitted with application, and taking into account submissions on nature conservation, it has been ascertained that adverse effects on site integrity of the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) can be excluded in view of the conservation objectives of these sites and that no reasonable scientific doubt remains as to the absence of such effects.

The conclusion is based on the following:

- A full and detailed assessment, including information presented in the Environmental Impact Assessment Report and supplementary information submitted by the applicant, of the proposed development including proposed mitigation measures and water quality monitoring in relation to the conservation objectives of River Barrow and River Nore SAC and the River Nore SPA.
- Effectiveness of mitigation measures proposed including supervision and monitoring and integration into CEMP ensuring smooth transition of obligations to eventual contractor.
- Application of planning conditions to ensure application of these measures.
- The proposed development will not affect the attainment of conservation objectives for the River Barrow and River Nore SAC or the River Nore SPA.

12.3. Environmental Impact Assessment

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

a) the nature, scale and extent of the proposed development,

b) the Environmental Impact Assessment Reports (EIAR's) and associated documentation submitted in support of the application,

c) the planning authority reports, and the submissions received from the Observers and Prescribed Bodies, and

d) the Inspector's report.

The Commission considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and provided information which is reasonable and sufficient to allow the Commission to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment. The Commission is satisfied that the information contained in the Environmental Impact Assessment Report is up to date and complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU.

The Commission considered, and agreed with the Inspector's reasoned conclusions, that the main significant direct and indirect effects, both positive and negative, of the proposed development on the environment are those arising from the impacts listed below and would be mitigated as follows:

- **Landscape and Visual:** Negative landscape and visual impacts arise during the operational phase of the proposed development given the placement of significant structures within the local landscape thereby changing the existing visual context. This will result in significant residual indirect and cumulative visual effects on a small number of residential receptors located in elevated positions to the west and north, within c. 800m, and which have primary views towards the proposed Wind Farm. Residual landscape effects on the site will be direct and not significant, and on the wider study area indirect, cumulative and not significant. Residual visual effects on other visual receptors will be indirect, cumulative and not significant.

- **Land, Soil, Geology, Air and Climate:** Taking account of mitigation measures to manage risk, a Low risk of peat slide has been demonstrated. Positive long term significant cumulative effect on climate as a result of the proposed development in combination with other wind farms due to reduced greenhouse gas emission from increased electricity generation from renewable sources.
- **Biodiversity and Birds**: The removal of linear habitats on site, including treelines and hedgerows will have local effects which can be mitigated through the delivery of mitigation measures including the Biodiversity Management and Enhancement Plan within the site. Negative local level effects on species and birds which are likely to arise in the construction or operational phases can be adequately mitigated by measures and monitoring outlined in the application documentation and are not considered to be significant.
- **Water (including aquatic habitat and species)**: There will be no impacts on water connectivity or movement of fish or result in the loss of instream habitat. Negative effects on surface water and groundwater, and on aquatic species, habitat and downstream receptors which are likely to arise from potential release of sediments and other pollutants into watercourses can be adequately mitigated by measures outlined in the application documentation. The proposed development will not impede the ability of ground water and surface water bodies to achieve good or high status and the Water Framework Directive.
- **Noise:** Negative noise impacts arise during the construction phase of the proposed development will be short-term, temporary, transient and mitigated through the implementation of measures outlined in the planning application documentation. Operational noise levels, individual and cumulatively, can be controlled by noise limit condition and mode management mitigation measures.
- **Cultural Heritage:** Permanent changes to Black Bridge a Protected Structure will have a direct, moderate and not significant effect, and will be further mitigated through the implementation of measures outlined in the planning application documentation.
- **Material Assets**: Negative traffic effects arise during the construction phase of the proposed development, the road network has the capacity to facilitate this traffic, and effects will be mitigated through the implementation of a traffic

management plan. Potential negative effects on telecommunication links and aviation, during operation can be adequately mitigated.

- **Population and Human Health**: Negative impacts on human health and population arising from construction and operation including noise, traffic and dust disturbance can be adequately mitigated by measures outlined in the application documentation. Long term positive moderate cumulative effects on the local area from employment and investment and from the displacement of CO^2 from the atmosphere arising from fossil fuel energy production.

The Commission completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures proposed, 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 Commission adopted the report and conclusions of the Inspector.

12.4. Proper Planning and Sustainable Development

It is considered that, subject to compliance with the conditions set out below, the proposed development would be in accordance with European, national, and regional renewable energy policies and with the provisions of the Carlow County Development Plan 2022-2028, would not have an unacceptable impact on the landscape and visual amenities of the area, the biodiversity of the area, geology and soil of the area, the water environment of the area, the residential amenities of the area, would not adversely affect the archaeological and cultural heritage of the area and would be acceptable in terms of traffic and road capacity and traffic safety, and would facilitate the generation of electricity to the national grid by means of renewable energy. The proposed development 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 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.	The period during which the development hereby permitted may be carried out shall be ten years from the date of this Order. **Reason:** Having regard to the nature and extent of the proposed development, the Commission considered it appropriate to specify a period of validity of this permission in excess of five years.
3.	This permission shall not be construed as any form of consent for: a) the associated development components where these are located within Kilkenny County Council including Grid Connection Route (c. 18.1km) and Turbine Delivery accommodation works; or b) agreement to a connection to the national grid. **Reason:** In the interest of clarity.
4.	(a) The permission shall be for a period of 35 years from the date of the first commissioning of the windfarm. All structures, including foundations, shall then be removed and the site reinstated unless, prior to the end of that period, planning permission shall have been granted for their retention for a further period. (b) Prior to the commencement of development, a detailed Site Restoration Plan providing for the removal of the turbines and all ancillary structures,

	and a timescale for its implementation, shall be submitted to and agreed in writing with the planning authority. (c) On full or partial decommissioning or if the wind farm ceases operation for a period of more than one year the windfarm, the turbines and all ancillary structures shall be dismantled and removed permanently from the site. The site shall be restored in accordance with the agreed Site Restoration Plan and all decommissioned structures shall be removed from the site within 12 months of decommissioning. **Reason:** To enable the planning authority to review the operation of the windfarm over the stated time period, having regard to the circumstances then prevailing, and in the interest of landscape restoration upon cessation of the project.
5.	The mitigation, monitoring and enhancement measures contained in the submitted Environmental Impact Assessment Report (EIAR) shall be implemented. **Reason:** To protect the environment.
6.	The mitigation and monitoring measures contained in the submitted Natura Impact Statement (NIS) shall be implemented. **Reason:** To protect the environment and the integrity of European sites.
7.	Prior to commencement of development, the applicant/developer shall submit to the planning authority a complete schedule of all mitigation, monitoring and enhancement measures. This shall identify who is responsible for the implementation of these measures and timescales for implementation. **Reason**: To protect the environment and the integrity of European sites.
8.	(a) Appropriate software shall be employed on each of the turbines to ensure that there will be no shadow flicker at existing nearby habitable dwellings (excluding participating properties). Turbine shutdown shall be undertaken by the wind energy developer or operator in order to eliminate the potential for shadow flicker.

	(b) 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 at dwellings. Within 12 months of the commissioning of the wind farm, this report shall be prepared and 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 by the planning authority at reasonable intervals thereafter. **Reason:** In the interest of residential amenity
9.	a) Noise levels generated by the windfarm following commissioning, by itself or in combination with other existing or permitted wind energy development in the vicinity, when measured externally at noise sensitive locations, shall not exceed: • For the daytime period 7am to 11pm, in quiet environments, where background noise is less than 30dB(A)L90 T10, a maximum noise level of 40dB(A)L90 T10, • For daytime periods, 7am to 11pm, where the background noise level exceeds 30dB(A)L90 T10, the greater of 45dB(A)L90 T10, or 5dB(A) above background levels, • For the nighttime period 11pm to 7am, for all noise environments, 43dB(A)L90 T10. b) Prior to the commissioning of the windfarm, the developer shall submit and agree in writing with the planning authority a Noise Compliance Monitoring Programme (NCMP) for the operational windfarm. The NCMP shall include a detailed methodology for all sound measurements, including frequency of monitoring and recording of results, which shall be made publicly available. The results of the initial noise compliance monitoring to be submitted to and agreed in writing with the planning authority within 12 months of commissioning of the wind farm. The NCMP shall be fully

	implemented during the operation of the windfarm. Reason: In order to protect the amenities of noise sensitive properties in the vicinity of the development. **Reason:** In order to protect the amenities of noise sensitive properties in the vicinity of the development.
10.	All works to Black Bridge, Protected Structure shall be carried out under the supervision of a qualified professional with specialised conservation expertise and in accordance with best conservation practice as detailed in "Architectural Heritage Protection: Guidelines for Planning Authorities" issued by the Department of the Environment, Heritage and Local Government in 2011. A Structural Assessment of the bridge in accordance with relevant TII Guidelines and an Architectural Impact Assessment shall be submitted for the written agreement of the planning authority prior to the commencement of any works on Black Bridge. **Reason:** To ensure that the character and integrity of the protected structure and NIAH listed structures is maintained and protected from unnecessary damage and loss of fabric.
11.	The construction of the development shall be managed in accordance with a complete Construction Environmental Management Plan (CEMP), which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. The CEMP shall provide an implementation tool for the schedule of mitigations (as conditioned) and as applicable to the construction phase and the contractor(s). The CEMP shall provide details of intended construction practice for the development, including, but not limited to, and in line with the methodology and mitigation and monitoring measures detailed within the EIAR and the NIS: (a) Details of the construction methodology for all the components of the development; (b) Details of all services and utilities along the grid connection route and methodology for crossing/diversions;

	(c) Details of on-site car parking and access arrangements for site workers and deliveries. (d) A construction traffic management plan. Details of abnormal load road routes and management of the abnormal load delivery process, construction haul routes, road closures and diversion, local property access arrangements, and alternative arrangements to be put in place for pedestrians in the case of the closure of any public road or footpath during the course of site development works; (e) Measures to obviate queuing of construction traffic on the adjoining road network; (f) Measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network; (g) Details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels; (h) Containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained. Such bunds shall be roofed to exclude rainwater; (i) Details of marking of hydrological buffer zones and silt fencing. Means to ensure that surface water run-off is controlled such that no silt or other pollutants enter local surface water sewers or drains; (j) A surface water management plan including details of water quality monitoring; (k) Works to be carried out in accordance with Inland Fisheries Ireland 'Guidelines on protection of fisheries during construction works in and adjacent to waters'; (l) Location and specifications of any temporary storage requirements; (m)A waste management plan for construction waste; (n) Location of all archaeological constraints and cultural heritage constraints relevant to the development;

	(o) A record of daily checks that the works are being undertaken in accordance with the CEMP shall be available for inspection by the planning authority, with monitoring on a daily basis of all watercourses in or adjacent to works areas; (p) Details of a local community feedback mechanism, where feedback including complaints are received and acted upon by a designated Community Liaison Officer. **Reason**: In the interest of amenities, public health and safety and environmental protection.
12.	The actual detail(s) of the development not confirmed at the time of the application, the subject of an opinion by the planning authority under section 32I(2), shall fall within: • Turbine Tip Height – Maximum Height 180m, Minimum Height 179.5m. • Hub Height – Maximum height 105m, Minimum height 102.5m. • Rotor Diameter – Maximum length 155m, Minimum length 149m. The applicant shall notify the relevant Planning Authority in writing prior to the commencement of the development. **Reason:** To clarify the details of what is being developed in accordance with the Planning Authority's opinion.
13.	a) Cables within the site shall be laid underground. (b) The wind turbines shall be geared to ensure that the blades rotate in the same direction. (c) Transformers associated with each individual turbine and mast shall be located either within the turbine mast structure or at ground level beside the mast. **Reason:** In the interest of visual amenity.
14.	Prior to the commissioning of the windfarm, the developer shall submit for the written agreement of the planning authority details of actions to be

	taken by the developer in the event of the development causing interference with telecommunication signals. Such actions shall be completed to minimise interference with telecommunication signals and shall be carried out to the written satisfaction of the planning authority at the developer's expense. **Reason**: In the interest of protecting telecommunication signals and residential amenity.
15.	Prior to the commencement of development, details of the following shall be submitted to the planning authority for written agreement: (a) Details of external finishes to substation buildings and structures, battery energy storage system, fencing, and for provision of CCTV to the sub-station compound. (b) Full details of turbines (including tip height, hub height and rotor diameter). **Reason**: In the interest of clarity and visual amenity.
16.	Site development and building works shall be carried out between the hours of 07.00 to 19.00 Mondays to Fridays inclusive, between 08.00 to 14.00 on Saturdays and not at all on Sundays and public holidays. Deviation from these times shall only be allowed in exceptional circumstances where prior written agreement has been received from the planning authority and in accordance with measures outlined in the EIAR. **Reason**: To safeguard the amenity of property in the vicinity.
17.	(a) Prior to the commencement of development, the applicant/developer shall carry out a preliminary screening of enroute communications, navigation and surveillance equipment in consultation with the Irish Aviation Authority. On completion of the screening, confirmation of its agreement with the Irish Aviation Authority shall be submit to the planning authority for written agreement. (b) Prior to commencement of development and following consultation with the Department of Defence and Irish Aviation Authority, the applicant/developer shall submit for written agreement of the planning

	authority, details of an obstacle warning light scheme which can be visible to night vision equipment. (c) The developer shall inform IAA of its intention to commence crane operations with a minimum of 30 days prior notification of their erection. (d) Prior to commissioning of the turbines, the developer shall inform the planning authority and the Irish Aviation Authority of the co-ordinates of the as constructed positions of the turbines and the highest point of the turbines (to the top of the blade spin). **Reason**: In the interest of air traffic safety.
18.	a) Prior to the commencement of development, the applicant/developer shall submit a Fire Risk Assessment of the BESS, which shall be carried out by a suitably qualified individual, for the review of the planning authority. No works shall commence on site until the applicant/developer has received the written agreement of the planning authority with regard to this assessment. b) Only first generation (new) batteries shall be used in the development. Prior to commencement of development a method statement shall be submitted for the written agreement of the planning authority detailing how end-of-life batteries shall be managed and disposed of. End-of-life battery management shall thereafter be undertaken in accordance with the details agreed. **Reason:** In the interests of public safety and environmental management.
19.	The Community Benefit scheme shall be adhered to for the life of the wind farm. The scheme shall be administered in accordance with the RESS Community Benefit Fund Good Practice Principles, 2021, prepared by the Department of the Environment, Climate and Communications. In the event that the developer does not utilise the government's Renewable Energy Support Scheme (RESS), prior to the commencement of development, a community gain proposal shall be submitted to the

	planning authority for written agreement. In default of agreement, the matter shall be referred to An Bord Pleanála for determination. **Reason:** To ensure that the community living in proximity to the wind farm, benefits from it.
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. 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 Coimisiún Pleanála for determination. **Reason**: In the interest of traffic safety and the proper planning and sustainable development of the area.
21.	Prior to commencement of development, the developer shall lodge with the relevant Planning Authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the relevant Planning Authority, to secure the satisfactory reinstatement of the site upon cessation of the project, coupled with an agreement empowering the relevant 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 relevant Planning Authority and the developer or, in default of agreement, shall be referred to An Coimisiún Pleanála for determination. Reason: To ensure the 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

	and 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 Coimisiún Pleanála to determine the proper application of the terms of the Scheme. **Reason**: It is a requirement of the Planning and 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.

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Heidi Thorsdalen
Senior Planning Inspector

22nd October 2025

Appendix A: Stage 1 Appropriate Assessment Screening

Screening for Appropriate Assessment Test for likely significant effects	
Step 1: Description of the project and local site characteristics	
Brief description of project	The proposed Seskin Wind Farm comprises 7 wind turbines, 38kV substation, BESS system, met mast, access tracks and site entrance, tree felling, and a c. 2km grid connection route, and strengthening works to Black Bridge. All located within Carlow County Council. First Party Appeal.
Brief description of development site characteristics and potential impact mechanisms	A detailed description of the proposed development is provided in Section 3.0 of the Inspectors report and comprises: • 7 wind turbines, 38kV substation, BESS system, met mast, access tracks and site entrance is located within commercial forestry and agriculture fields. Access track crosses Seskinrea Stream and tributary. • Approximate 2km grid connection route via underground 38kV cabling from the proposed 38kV substation along the existing tracks and public road L30371. The route crosses one existing watercourse crossing along the L30372 (Bridge 7), unnamed tributary to Seskinrea Stream and works in proximity to Bridge 6 (Phillip's Bridge), Coolcullen River. • Strengthening works to Black Bridge which crosses Dinin River including increased surface fill depth and increased parapet height. The southern section of the bridge on the L3037 is located within Co. Carlow. The Proposed Project (Section 1.0) also includes an 18.1km grid connection route located within the existing road corridor to Kilkenny 110kV Substation, strengthening works to Black Bridge and N78/L1831 Junction accommodation works, all works within County Kilkenny.

Screening for Appropriate Assessment Test for likely significant effects	
Screening report	Yes - Appropriate Assessment Screening Report and Natura Impact Statement (MKO, May 2024).
Natura Impact Statement	Yes - Appropriate Assessment Screening Report and Natura Impact Statement (MKO, May 2024).
Relevant submissions	**Carlow County Council** – Refused the application, see Section 4.1 for reasons for refusal and 4.2 for summary of Planner's report. See Section 4.3 of internal technical reports. **HSE** – Further noise assessment recommended. Conditions recommended for management of peat and mitigation measures outlined in Chapter 9 Water and Chapter 10 Air Quality and for shadow flicker. See Section 4.4 **Kilkenny County Council** – Visual impacts and transport impacts concerns, and details requested for dealing with surface water and ground water from construction works. See Section 4.4

Additional information:
Only European sites where a potential source-pathway-receptor chain exist between them and the proposed development i.e. the proposed Wind Farm and associated development within Co. Carlow.

Step 2. Identification of relevant European sites using the Source-pathway-receptor model

European Site (code)	Qualifying interests[1] Link to conservation objectives (NPWS, date)	Distance from proposed development (km)	Ecological connections[2]	Consider further in screening[3] Y/N
River Barrow and River Nore SAC (Site code 002162)	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Immediately adjacent to Phillip's Bridge at Coolcullen river (grid connection route) and Black Bridge at Dinin River (turbine delivery route).	Yes – Proximity and hydrologically linked to the SAC.	**Y**

Screening for Appropriate Assessment Test for likely significant effects				
	Mediterranean salt meadows (Juncetalia maritimi) [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation (Cratoneurion) [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Vertigo moulinsiana (Desmoulin's Whorl Snail) [1016] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Alosa fallax fallax (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355] Vandenboschia speciosa (Killarney Fern) [6985] Conservation objectives (NPWS, June 2025): CO002162.pdf	.		
River Nore SPA (Site code: 004233)	Kingfisher (Alcedo atthis) [A229] Conservation objectives (NPWS, July 2024): CO004233.pdf	15.7km (overland) from the proposed Wind Farm site.	Yes – Hydrologically linked to the SPA.	**Y**
Step 3. Describe the likely effects of the project (if any, alone or in combination) on European Sites				

Screening for Appropriate Assessment Test for likely significant effects		
AA Screening matrix		
Site name **Qualifying interests**	**Possibility of significant effects (alone) in view of the conservation objectives of the site***	
	Impacts	**Effects**
Site 1: River Barrow and River Nore SAC (002162) Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (Juncetalia maritimi) [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation (Cratoneurion) [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	**Direct:** No instream work proposed as part of grid connection route at Bridge 6 or strengthening works at Black Bridge. **Indirect:** Potential for negative impacts on water quality and on aquatic receptors via surface water runoff including nutrients, silt, sedimentation and pollution such as hydrocarbons and cementitious material. Unlikely risk of fracture blow out from HDD, and release of drilling fluid. Large volume of concrete required for wind turbine foundation, potential impacts on ground water.	Potential disturbance risks to Otter, a qualifying interest species for the SAC, which could be associated with increased noise, additional lighting and increased human activity at construction. Potential damage to riparian and river habitats from inadvertent spillages of such as hydrocarbons or drilling fluid. Potential damage to the habitats and freshwater qualifying interest species dependent on water quality, an impact of sufficient magnitude could undermine the sites conservation objectives.

Screening for Appropriate Assessment Test for likely significant effects		
Vertigo moulinsiana (Desmoulin's Whorl Snail) [1016] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Alosa fallax fallax (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355] Vandenboschia speciosa (Killarney Fern) [6985] Conservation objectives: CO002162.pdf		
	Likelihood of significant effects from proposed development (alone): **Yes**	
	If No, is there likelihood of significant effects occurring in combination with other plans or projects?	
Site name **Qualifying interests**	**Possibility of significant effects (alone) in view of the conservation objectives of the site***	
	Impacts	**Effects**
Site 2: River Nore SPA (004233) Kingfisher (Alcedo atthis) [A229] Conservation objectives: CO004233.pdf	Direct: No. Distance to SPA and no survey observations of King Fisher or nesting sites within 5km of the proposed Wind Farm site. No observation along the proposed grid connection route Indirect:	A decline in water quality would undermine the conservation objectives set for water quality targets and to prey availability.

Screening for Appropriate Assessment Test for likely significant effects		
	Potential for negative impacts on water quality via surface water runoff and increased sedimentation and pollution.	
	Likelihood of significant effects from proposed development (alone): **Yes**	
	If No, is there likelihood of significant effects occurring in combination with other plans or projects?	

Step 4 Conclude if the proposed development could result in likely significant effects on a European site

Based on the information provided in the screening report, site visit, review of the conservation objectives and supporting documents, I consider that in the absence of mitigation measures beyond best practice construction methods, the proposed development has the potential to result significant effects on the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233).

I concur with the applicant's findings that such impacts could be significant in terms of the stated conservation objectives of the SAC and SPA when considered on their own and in combination with other projects and plans in relation to pollution related pressures and disturbance on qualifying interest habitats and species.

In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in the AA screening, it is not possible to exclude the possibility that the proposed development alone would result significant effects on European sites, River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) in view of the sites conservation objectives.

An appropriate assessment is required on the basis of the possible effects of the project 'alone'. Further assessment in combination with other plans and projects is not required at screening stage.

Appendix B: Stage 2 Appropriate Assessment

Appropriate Assessment
The requirements of Article 6(3) as related to appropriate assessment of a project under part XAB, sections 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section.

Taking account of the preceding screening determination, the following is an Appropriate Assessment of the implications of the proposed development in view of the relevant conservation objectives of River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) based on scientific information provided by the applicant.
 	
The information relied upon includes the following:
• Appropriate Assessment Screening and Natura Impact Statement prepared by MKO (May 2024) including appendices:
  ○ Appendix 1 Aquatic Baseline Report
  ○ Appendix 2 EIAR Chapter 4 Description
  ○ Appendix 3 EIAR Chapter 9 Water
  ○ Appendix 4 EIAR Appendix 2-3 Cumulative List
• Environmental Impact Assessment Report prepared by MKO (May 2024).
 	
I am satisfied that the information provided is adequate to allow for Appropriate Assessment.
 	
I note the NIS confirms that all elements of the Proposed Project have been assessed as part of the NIS.
 	
This AA have been informed by the updated Conservation Objectives for both the River Barrow and River Nore SAC (CO002162.pdf) and for the River Nore SPA (CO004233.pdf), as included in my AA Screening above.

Appropriate Assessment

Submissions/observations
Summary of planning authority reports, submission and observations can be located in Sections 4.0 and 7.0 of the Inspectors Report.

Carlow County Council (see Sections 4.2 of Inspector's Report):

- Planner's Report, summary of AA related comments:
  - AA carried out and completed effectively and all relevant factors have been considered.
  - Concludes that the proposed development, individually or in-combination with other plans or projects, will not adversely affect the integrity of River Barrow and River Nore SAC and River Nore SPA.
  - Finds that chapter 9 deals effectively and comprehensively with specific threats to ecological receptors via hydrological linkages.
- Environment Department, Senior Executive Engineer (31/05/24), summary of AA related comments:
  - No objection subject to conditions relating to adherence to mitigation measures in the EIRA, NIS and CEMP.
  - The Environment Section has ascertained that the project, along or in combination with other projects, will not adversely affect the integrity of the Natura sites concerned.
- Planning Department, Executive Engineer (19/06/24), summary of AA related comments:
  - No objection subject to conditions relating to CEMP, surface water CEMP, existing forestry drains and proposed drainage system, surface water run-off and suds, and crossing of streams.

HSE Environmental Health Services (14/06/24), summary of AA related comments:

- Recommends that specific measures for the management of peat stability at T05 as outlined in the EIAR are conditioned.

Kilkenny County Council (28/06/24), summary of AA related comments:

Appropriate Assessment			
• Details required as regards to proposals for dealing with surface water and groundwater from construction works including deliveries and operations. AA related observations made to the appeal include consideration of pathway and impact on headwater and qualifying interest of the River Barrow and River Nore SAC and River Nore SPA, deficient sediment controls. These generally reflects observations made to the planning application.			
River Barrow and River Nore SAC (002162): **Summary of Key issues that could give rise to adverse effects (from screening stage):** **(i) Water quality degradation (construction)**			
Qualifying Interest features likely to be affected	**Conservation Objectives (CO) Targets and attributes (summary-inserted)**	**Potential adverse effects**	**Mitigation measures (summary)**
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	Maintain the Favourable conservation condition. Relevant Attribute/Target: • Habitat distribution: No decline. • Substratum composition: dominated by large particles and free from fine sediments	Not recorded. Full distribution of habitat within SAC unknown. Water quality degradation, particularly silt laden run off could affect habitat quality and distribution and undermine conservation objectives.	NIS Section 7. Setback distance from sensitive hydrological features. No direct discharge of runoff.

Appropriate Assessment			
	• Water quality: Low concentration of suspended solids to prevent excessive deposition of fine sediments.		Silt, sediments and pollution control and treatment measures. Application of industry standard controls including Inland Fisheries, OPW guidelines/requirements. CEMP, drainage design, peat and spoil management, surface water management plan, grid construction methodology, emergency plan and monitoring and daily supervision.
Petrifying springs with tufa formation (Cratoneurion) [7220]	Maintain the Favourable conservation condition. Relevant Attribute/Target: • Water quality: maintain oligotrophic and calcareous conditions	Not recorded. Groundwater-dependent terrestrial ecosystem under WFD. Extent of habitat within SAC unknown. Groundwater quality degradation as a result of silt laden run off or other pollutants could undermine conservation objectives.	
Freshwater Pearl Mussel (Margaritifera margaritifera) [1029]	Restore the Favourable conservation condition. Relevant Attribute/Target: • Distribution (Nore): Restore (21.13km) • Population (Nore): restore (at least 5000 adults) • Population structure: juvenile recruitment • Suitable habitat: restore condition • Water quality: restore EQR for macroinvertebrates and phytobenthos	Not recorded. No hydrological connection to the targeted river systems, which are all upstream of hydrological pathway with the proposed Wind Farm site - Mountain River, Ballymurphy (or Ballyroughan River) River, or Nore River, upstream of Ballyragget. Potential indirect effect on water quality downstream could impact on the salmonid balance.	As above.

Appropriate Assessment			
	• Host fish: Maintain sufficient juvenile salmonids to host glochidial larvae		
White-clawed Crayfish (Austropotamobius pallipes) [1092]	Main Favourable conservation condition. Relevant Attribute/Target: • Distribution: No reduction. • Population structure: recruitment • Water Quality: At least Q3-4 at all sites sampled by EPA	None recorded during survey. eDNA surveys detected white-clawed crayfish and crayfish plague downstream on Dinin River. Species potentially present within ZoI. Negative impact on water quality could undermine conservation objective targets relating to water quality and distribution.	As above.
Sea Lamprey (Petromyzon marinus) [1095]	Restore the Favourable conservation condition. Relevant Attribute/Target: • Population structure: Juvenile • Juvenile density in fine sediment: at least 1/m^2 • Extent and distribution of Spawning habitat: No decline. • Availability of juvenile habitat: More than 50% of sample site positive	Lamprey ammocoetes recorded at C3, Oldleighlin Stream. No recordings from the other 18 no. survey sites. Considered to be within ZoI. Water quality degradation such as silt laden runoff could undermine the conservation objective, particularly spawning habitat.	As above.

Appropriate Assessment			
Brook Lamprey (Lampetra planeri) [1096]	Restore the Favourable conservation condition. Relevant Attribute/Target: • Population structure: Juvenile • Juvenile density in fine sediment: at least 2/m2 • Extent and distribution of Spawning habitat: No decline. • Availability of juvenile habitat: More than 50% of sample site positive	As above.	As above.
River Lamprey (Lampetra fluviatilis) [1099]	Restore the Favourable conservation condition. Relevant Attribute/Target: As above for Brook Lamprey.	As above.	As above.
Twaite Shad (Alosa fallax fallax) [1103]	Restore the Favourable conservation condition. Relevant Attribute/Target: • Population structure: more than one age class present	None recorded. CO notes regular breeding confirmed in River Barrow in recent years, but not in River Nore. Species considered to be within ZoI.	As above.

Appropriate Assessment			
	• Extent and distribution of Spawning habitat: No decline. • Water Quality: Oxygen levels no lower than 5mg/l • Spawning habitat quality: • Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plants) growth	Water quality degradation, particularly oxygen levels could undermine the conservation objective.	
Salmon (Salmo salar) [1106]	Restore the Favourable conservation condition. Relevant Attribute/Target: • Adult spawning fish: conservation limits exceeded. • Salmon fry abundance: maintain or exceed 0+ fry mean catchment • Out-migrating smolt abundance: no decline	Salmon recorded via electro-fishing at Seskinrea Stream (A6), Coolcullen River (A7, Philip's Bridge) and Dinin River (A9, Black Bridge) as well as further downstream. Moderate quality spawning habitat. Water quality degradation, particularly from silt laden runoff could undermine the conservation objective.	As above.

Appropriate Assessment			
	• Number and distribution of redds: no decline of spawning redds due to anthropogenic causes. • Water quality: At least Q4 at all sites sampled by EPA.		
Otter (Lutra lutra) [1355]	Restore the Favourable conservation condition. Relevant Attribute/Target: • Distribution: No significant decline. • Fish biomass available: No significant decline.	No signs of otter recorded within the site. Spraint sites were recorded further downstream on Dinin River (A10 & A11) and on River Barrow (C3 & B4). Foraging suitability was noted at Coolcullen River A7, Phillip's Bridge) and Dinin River (A9, Black Bridge) as well as further downstream. Water quality degradation from silt laden and pollutant runoff could undermine the conservation objective, in particular fish biomass available. Potential for disturbance. Potential for disturbance from increased human activity during construction.	As above.
Other QIs			
Estuaries [1130]	Not at risk.	Rational for exclusion: No potential to undermine any conservation objective, given nature and scale of the proposed and the attenuating and diluting property of the intervening waterbody, located more than 50km downstream.	

Appropriate Assessment		
Mudflats and sandflats not covered by seawater at low tide [1140]	Not at risk.	As above.
Reefs [1170]	Not at risk.	As above.
Salicornia and other annuals colonising mud and sand [1310]	Not at risk.	As above.
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Not at risk.	As above.
Mediterranean salt meadows (Juncetalia maritimi) [1410]	Not at risk.	As above.
European dry heaths [4030]	Not at risk.	Rational for exclusion: No potential to impact this terrestrial habitat.
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	Not at risk.	As above.
Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	Not at risk.	As above.
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion,	Not at risk.	As above.

Appropriate Assessment		
Alnion incanae, Salicion albae) [91E0]		
Desmoulin's Whorl Snail (Vertigo moulinsiana) [1016]	Not at risk.	Rational for exclusion: A terrestrial species, no potential impact from indirect negative effects on water quality as a result of the proposals.
Killarney Fern (Vandenboschia speciosa) [6985]	Not at risk.	Rational for exclusion: Species is terrestrial in nature. Indirect water quality effects, not impacted from indirect negative effects on water quality.

The above table is based on the documentation and information provided on the file and as noted above, takes account of the updated conservation objectives for the River Barrow and River Nore SAC. I am satisfied that the submitted NIS has identified the relevant attributes and targets of the Qualifying Interests.

Assessment of issues that could give rise to adverse effects view of conservation objectives

i. Water quality degradation

Water quality of SAC remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species and Annex I habitat listed. Water quality degradation is the main risk from unmanaged construction works, specifically excavation, tree felling, stock piling, dewatering, watercourse crossings, where silt laden run off and other pollutants reaches the River Nore and River Barrow downstream via upstream drains and watercourses. Decrease in water quality downstream could compromise conservation objectives for Annex I habitats and Annex II species listed, such as increase sedimentation could alter habitat quality for spawning or nursery grounds. The site is not located upstream of the targeted river systems for FWPM and the Aquatic Surveys (NIS, Appendix 1) showed that riparian habitat surveyed was unsuitable for FWPM. Potential suitability for other species including White-clawed crayfish, salmonids, lamprey and Otters were recorded downstream of the site.

Appropriate Assessment

Mitigation measures and conditions

The focus of mitigation measures proposed are at preventing release of pollutants, sediments, nutrients and silt into surface water and receiving watercourses during construction and operational phases. Water quality mitigation measures are set out in Section 7. of the NIS and within EIAR Chapter 9 (Water), Construction Environmental Management Plan (CEMP) (EIAR Appendix 4-4), Surface Water Management Plan (SWMP) (EIAR Appendix 4-5), Grid Connection Construction Methodologies (Appendix 4-7) and Drainage Design Drawings are included in Appendix 9-1.

A number of mitigation measures relate to avoidance and design:

- Hydrological buffer zones to watercourses.
- Setback distance to hydrological features facilitates installation of drainage measures.
- Integration of existing forestry drainage network, and maintaining surface water flowpaths where they exists and within each forestry compartment.
- Upgrading and use of existing forestry tracks.
- No direct runoff discharge to watercourses (without treatment).
- No instream works for clear span bridge crossing of Seskinrea Stream, HDD crossing for grid connection route or for strengthening works at Black Bridge.
- A 15m buffer zone boundary at grid connection route watercourse crossings, no storage of material / equipment or overnight parking of machinery within the buffer. No refuelling with 100m buffer zone from watercourse crossings.
- Grid connection route works are transient.
- No hydrocarbon storage will occur for the proposed Grid Connection Route and turbine delivery route.
- Bunding of onsite electrical control building.
- No batching of wet-concrete products will occur. Ready-mixed supply of wet concrete products and where possible, pre-cast concrete elements will be used.

Appropriate Assessment
• No water or wastewater will be sourced on the site, nor discharged to the site. No requirement for the storage of wastewater along the proposed Grid Connection Route/Black Bridge. • All guidance / mitigation measures required by the OPW and/or the Inland Fisheries Ireland (IFI) is incorporated into the design of the proposed crossings. Best practice, control, mitigation and monitoring measures: • Drainage system including source controls, in-line controls and treatment system measures. All drainage measures will be installed in advance of the works. • Placement of silt traps in existing drains upstream of any streams where construction works / tree felling is taking place, and double silt fence perimeter will be placed down-slope of works areas that are located inside the watercourse 50m buffer zone. • Settlement ponds based on drainage catchments, with 11hr retention and a 1 in 10 year return flow (climate change allowance). • Localised discharge of runoff from turbine hardstanding areas and buffered outfalls. • Temporary blocking of all existing dry forestry drains downgradient of works. • Temporary blocking of roadside drains and drainage inlets. • Siltbuster or similar will provide additional line of defence. • Small working areas and works planned based on expected weather conditions. • Detail is provided on sediment control, concrete and hydrocarbon control including drainage measures and monitoring and emergency response plan. • Water runoff control measures for peat/spoil repository areas, along with cover and reseeding. • Abutments will be constructed from precast units combined with in-situ foundations for watercourse crossing.

- Remove the existing culvert and replace with a clear span bottomless culvert on tributary. Upstream and downstream dams to be placed to prevent sediment laden water from entering the watercourse, and removed on completion of works.
- Watercourse crossings will only be done over a dry period between July and September (as required by IFI for in-stream works) to avoid the salmon spawning season and to have more favourable (dryer) ground conditions.
- Watercourse crossing works area will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance.
- Detail provided on directional drilling measures including bunding of plant area, type of drilling fluid and its containment, daily monitoring and fracture blow-out prevention and management plan.
- Daily monitoring of excavations by the Environmental Clerk of Works, with support by the Project ecologist and hydrologist as per the CEMP.
- Water quality monitoring during the construction phase of the Proposed Project by Project Hydrologist at primary watercourses.
- Construction of the site drainage system will only be carried out during periods of low rainfall.
- inspection and maintenance plan for the on-site construction drainage system.
- Installation of a temporary pre-cast concrete or metal bridge during construction of upgraded watercourse crossing if required.
- Operational drainage system, include for sub-catchment attenuation and no alteration of the catchment size contributing to each of the main downstream watercourses.
- Construction sediment and hydrocarbons control measures apply to operational and decommissioning phases.

I am satisfied that the preventative measures which are aimed at interrupting the source-pathway-receptor are targeted at the key threats to protected aquatic species and habitats by arresting the surface water pathways or reducing possible effects to a non-significant level, adverse effects can be prevented. Mitigation measures related to water quality are captured in planning conditions of the Inspectors Report.

ii. Disturbance of mobile species

Appropriate Assessment
Aquatic surveys recorded no otter signs near the proposed development, although spraint signs were recorded downstream within the study area and potential foraging suitability of adjacent watercourses noted. Increased human activities during works at watercourse crossings may cause temporary disturbance to otters. There will be no temporary or permanent barriers as a result of the proposed development. **Mitigation measures and conditions** • No instream works proposed for the grid connection route and Black Bridge. • Daytime working hours as set out in CEMP.
In-combination effects As set out above, the NIS has carried out an assessment of the Proposed Project and has therefore, considered the in-combination effects with the proposed grid connection route and turbine delivery route. An assessment of cumulative effects with other plans and projects has been carried out in Section 9. of the NIS, including an assessment of cumulative effects with other grid connections in Section 9.2.2 and wind farms in Section 9.2.3. The NIS concluded that, subject to implementation of mitigation measures, that no potential for in combination effects were identified. I have reviewed the details of these projects, plans and policies which were identified in Chapter 9. of the applicant's NIS. As noted previously, the cumulative baseline for wind farms no longer includes Coolglass Wind Farm (c. 15.6km separation distance) and the proposed grid connection route no longer includes Kilderry Solar Farm or White Hill Wind Farm grid connections. I am satisfied that in-combination effects have been assessed adequately in the NIS. The proposed development has been assessed as part of the overall Proposed Project, and no other plans and projects could combine to generate significant effects when mitigation measures are considered. The applicant has demonstrated satisfactorily that no significant residual effects will remain post the application of mitigation measures and there is therefore no potential for in-combination effects.
Findings and conclusions The applicant determined that following the implementation of mitigation measures that the proposed development alone, or in combination with the overall Proposed Project and other plans and projects, will not adversely affect the integrity of the River Barrow and River Nore SAC.

Appropriate Assessment

Based on the information provided, I am satisfied that adverse effects arising from aspects of the proposed development can be excluded for the River Barrow and River Nore SAC. No direct impacts are predicted. Indirect impacts would be temporary in nature and mitigation measures are described to prevent ingress of silt laden surface water and other construction related pollutants. Monitoring measures are also proposed to ensure compliance and effective management of measures. I am satisfied that the mitigation measures proposed to prevent such effects have been assessed as effective and can be implemented. No significant in combination effects are predicted.

Reasonable scientific doubt

I am satisfied that no reasonable scientific doubt remains as to the absence of adverse effects.

Site Integrity

The proposed development will not affect the attainment of Conservation objectives of the River Barrow and River Nore SAC. Adverse effects on site integrity can be excluded, and no reasonable scientific doubt remains as to the absence of such effects.

River Nore SPA (004233):

Summary of Key issues that could give rise to adverse effects (from screening stage):

(i) Water quality degradation (construction)

Qualifying Interest features likely to be affected	Conservation Objectives Targets and attributes (summary-inserted)	Potential adverse effects	Mitigation measures (summary)
Kingfisher (Alcedo atthis) [A229]	Maintain the Favourable conservation condition.	No observation of Kingfisher within 5km of the proposed Wind Farm and no observation	NIS Section 7.

Appropriate Assessment			
	Relevant Attribute/Target: • Numbers and distribution: No significant loss in the long term. • Location, hectares and forage biomass: to support population • Water quality: biotic and abiotic indices reflect overall good-high quality status. • Barriers to connectivity: No significant increase.	along the proposed Grid Connection Route. Direct impacts ruled out. Diet consists predominantly of small fish/ aquatic invertebrates. Wetland habitat degradation via pollution. Water quality degradation from silt laden and pollutant runoff could undermine the conservation objective, in particular fish biomass available.	Setback distance from sensitive hydrological features. No direct discharge of runoff. Silt, sediments and pollution control and treatment measures. Application of industry standard controls including Inland Fisheries, OPW guidelines/requirements. CEMP, drainage design, peat and spoil management, surface water management plan, grid construction methodology, emergency plan and monitoring and daily supervision.
The above table is based on the documentation and information provided on the file and as noted above, takes account of the updated conservation objectives for the River Nore SPA. I am satisfied that the submitted NIS has identified the relevant attributes and targets of the Qualifying Interests.			

Appropriate Assessment

Assessment of issues that could give rise to adverse effects view of conservation objectives

i. Water quality degradation

As above for the River Barrow and River Nore SAC. Maintenance of good water quality is an attribute required to maintain favourable conservation condition for Kingfisher.

Water quality mitigation measures and conditions
As above for the River Barrow and River Nore SAC.

In-combination effects
I am satisfied that in-combination effects have been assessed adequately in the NIS. The proposed development has been assessed as part of the overall Proposed Project, and no other plans and projects could combine to generate significant effects when mitigation measures are considered. The applicant has demonstrated satisfactorily that no significant residual effects will remain post the application of mitigation measures and there is therefore no potential for in-combination effects.

Findings and conclusions
The applicant determined that following the implementation of mitigation measures that the proposed development alone, or in combination with the overall Proposed Project and other plans and projects, will not adversely affect the integrity of the River Nore SPA.

Based on the information provided, I am satisfied that adverse effects arising from aspects of the proposed development can be excluded for the River Nore SPA considered in the Appropriate Assessment. No direct impacts are predicted. Indirect impacts would be temporary in nature and mitigation measures are described to prevent ingress of silt laden surface water and other construction related pollutants. Monitoring measures are also proposed to ensure compliance and effective management of measures. I am satisfied that the mitigation measures proposed to prevent

Appropriate Assessment

such effects have been assessed as effective and can be implemented and conditioned if permission is granted. No significant in combination effects are predicted.

Reasonable scientific doubt
I am satisfied that no reasonable scientific doubt remains as to the absence of adverse effects.

Site Integrity
The proposed development will not affect the attainment of the Conservation objectives of the River Nore SPA. Adverse effects on site integrity can be excluded, and no reasonable scientific doubt remains as to the absence of such effects.

Appropriate Assessment Conclusion:

In screening the need for Appropriate Assessment, it was determined that the proposed development could result in significant effects on the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) in view of the conservation objectives of those sites and that Appropriate Assessment under the provisions of S177U was required.

Following an examination, analysis and evaluation of the NIS all associated material submitted with application, and taking into account submissions on nature conservation, I consider that adverse effects on site integrity of the River Barrow and River Nore SAC (Site code: 002162) and River Nore SPA (Site code: 004233) can be excluded in view of the conservation objectives of these sites and that no reasonable scientific doubt remains as to the absence of such effects.

My conclusion is based on the following:

- A full and detailed assessment, including information presented in the Environmental Impact Assessment Report and supplementary information submitted by the applicant, of the proposed development including proposed mitigation measures and water quality monitoring in relation to the conservation objectives of River Barrow and River Nore SAC and the River Nore SPA.

Appropriate Assessment
• Effectiveness of mitigation measures proposed including supervision and monitoring and integration into CEMP ensuring smooth transition of obligations to eventual contractor. • Application of planning conditions to ensure application of these measures. • The proposed development will not affect the attainment of conservation objectives for the River Barrow and River Nore SAC or the River Nore SPA.