Inspector's Report

ABP-310171-21

Development	Proposed amendments to the previously authorised Upperchurch Windfarm (An Bord Pleanála case reference PL22.243040) to increase the size of the wind turbines and amend the height and design of the two meteorological masts.
Location	In the townlands of Graniera, Shevry, Knockcurraghbola Commons, Knockmaroe, Grousehall, Cummer, Foilnaman, Gleninchnaveigh, Coumnageeha, Coumbeg, Knocknamena Commons, Glenbeg and Seskin, Co. Tipperary.
Planning Authority	Tipperary County Council
Applicant(s)	Ecopower Developments Limited
Type of Application	Application under Section 37E of the Planning and Development Act, 2000 (as amended).
Prescribed Bodies	1. Geological Survey Ireland 2. Irish Aviation Authority

	3. Transport Infrastructure Ireland
Observer(s)	1. John Maher 2. Kilcommon Community Council 3. Martina & Jim O'Malley and others 4. Nicola & Martina O'Keefe 5. PJ Harrington, Chairman of Board of Management, Scoil Iosagáin 6. Michael Green, Upperchurch/ Drombane Development Association 7. Upperchurch/ Drombane GAA Club 8. Vincent O'Dwyer 9. Michael Greene, Chairperson, Upperchurch Childcare
Date of Site Inspection	20th May 2020
Inspector	Donal Donnelly

Contents

1.0 Introduction

1.1. An application under the provisions of Section 37E of the Planning and Development Act, 2000 (as amended) was received by the Board from Ecopower Developments Limited. The proposal is for amendments to the previously permitted Upperchurch Windfarm (PL22.243040) to increase the uppermost tip height of the permitted wind turbines and amend the height and design of the meteorological mast on site at various townlands including Graniera, Shevry and Knockcurraghbola Commons, Co. Tipperary.

1.2. The application follows a pre-application consultation (ABP-307690-20), where the Board determined that the proposed development falls within the definition of energy infrastructure in the Seventh Schedule of the Planning and Development Act, 2000 (as amended) and is of strategic importance by reference to the requirements of Section 37A(2)(a) of the Act. Accordingly, the current application for approval is now being sought from the Board.

2.0 Site Location and Description

2.1. The appeal site is located in mid-western Co. Tipperary within the Upperchurch and Foilnaman Electoral Divisions. The villages of Upperchurch and Kilcommon are approximately 2km to east and west of the site respectively. Thurles is approximately 17km to the east and Newport is approximately 20km to the west. The R497 and R503 Regional Routes are located to the south and there is a network of local roads around the site.

2.2. The surrounding area is characterised by upland rolling hills and valleys to the east of the Slievefelim and Silvermines Mountains. The permitted Upperchurch Windfarm is situated around a number of foothills of the wider range of hills and mountains to the east. The surrounding hills include Knockavillogue (364m OD) and Knockmaroe (411m OD), as well as three other hills at Knockcurraghbola Commons, Graniera and Shevry townlands with heights of 376m, 377m and 361m OD respectively. The highest mountains in the wider area are Mother Hill (543m OD) approximately 7.5km west, and Keeper Hill (694m OD) approximately 12km north-west of the proposed windfarm site.

2.3. The main river in the vicinity of the windfarm site is the Owenbeg to the south-east, which is in the Clodiagh River sub-catchment and the River Suir catchment. There are also a number of other watercourses between the turbine locations that drain to both the Suir and Shannon catchments.

2.4. The permitted windfarm includes a cluster of eight permitted turbines (T1-8) to the south-east positioned around an afforested hill in the townland of Shevry and along a mountain (377m OD) in the townland of Graniera. The main entrance to the permitted windfarm will be located off the R503 to the south of the site. The existing Milestown windfarm comprising 6 no. turbines is immediately to the west of this cluster.

2.5. There is a cluster of eight permitted wind turbines (T9-16) in the vicinity of Knockavillogue. The Éamonn an Chnoic (Ned of the Hill) Loop walking route passes through this part of the site. The western cluster of turbines (T17-21) is aligned roughly from south to north over Knockmaroe between the afforested eastern and western sides of this mountain. The central cluster of the windfarm contains a single turbine (T22) and the permitted windfarm substation.

2.6. The windfarm site covers an area of approximately 70 hectares. The application site extends approximately 6.85km from north-east to south-west, and by 4.1km from north-west to south-east. The main land uses in the area are hill farming and forestry.

3.0 **Proposed Development**

3.1. Planning permission is sought for amendments to the windfarm development comprising of 22 no. turbines granted under Reg. Ref: 13/510003 (PL22.243040). The proposed amendments will consist of the following:

- Increase in size of the permitted turbines from up 126.6m maximum blade tip height to 152m by increasing the turbine hub height to within a range of between 89m and 94m and increasing the turbine rotor diameter to within a range of between 112m and 117m[1].

[1] The applicant confirmed within a further information submission of 26th November 2021 that the tip height of the proposed turbines would be 152m with hub height of 93.5m and rotor diameter of 117m. The corresponding height of the proposed met masts would be 93.5m.

- Amendment of height and design of 2 no. permitted meteorological masts from tubular tower masts up to 80m in height to lattice tower masts up to 93.5m in height[2].

3.2. An Environmental Impact Assessment Report and Natura Impact Statement (Stage 2 Appropriate Assessment) have been prepared in respect of this application. The proposed development (proposed larger turbines and met masts amendment amending PL22.243040), is one of five elements of the Whole Upperchurch Windfarm (UWF) Project comprising the following:

- Element 1: Upperchurch Windfarm granted in 2014 under PL22.243040 and including current amendment and previous amendment to UWF substation granted in December 2020 under Reg. Ref: 20/1048;
- Element 2: UWF Grid Connection (SID case approved in February 2021 under ABP-306204-19);
- Element 3: UWF Related Works (Appeal case Reg. Ref: 18/600913/ ABP-303204-19 granted in February 2021);
- Element 4: UWF Replacement Forestry (subject to forestry licence application to Department of Agriculture, Forestry and the Marine);
- Element 5: UWF Other Activities (no planning required).

4.0 Planning History

4.1. Subject site

Tipperary County Council Reg. Ref: 13/510003 (PL22.243040)

4.1.1. Ecopower Development Ltd. was granted a ten-year permission in August 2014 for 22 wind turbines up to 126.6m in height, 2 no. meteorological masts with wind measuring equipment attached, access roads, electrical substation compound, control buildings and ancillary works.

[2] The increase in height of the met masts is related to the turbine height increase because EirGrid require continuous site meteorological information, generally at hub height.

Tipperary County Council Reg. Ref: 18/600913 (ABP-303634-19)

4.1.2. The Board granted permission to Ecopower Developments Limited on 8th February 2021 for Upperchurch Windfarm related works to include 17.9km of internal windfarm cabling; haul route works; 18m high telecoms relay pole; realignment of windfarm roads; change of use of agricultural access to agricultural and forestry; and ancillary works.

An Bord Pleanála Ref: ABP-306204-19

4.1.3. On 8th February 2021, the Board approved a new 110kV substation, underground 110kV cabling and ancillary works to connect the already consented Upperchurch windfarm substation (PL22.243040), to the existing 110kV overhead line.

Tipperary County Council Reg. Ref: 20/1048

4.1.4. Permission granted in December 2020 for amendments to Upperchurch Windfarm Electrical Substation, authorised under An Bord Pleanala ref no PL.22.243040; Tipperary County Council REF: NO. 13/510003. The amendments consist of: a) Increase in size of the Substation compound yard; b) Change to the layout of Electrical equipment in the substation compound yard; c) Change in size, design and increase in height of the two Control Buildings and d) Ancillary works.

An Bord Pleanála Ref: ABP-301959-18

4.1.5. On 17th December 2018, the Board refused to approve an 110kV electrical substation and 110kV underground electrical cabling from the proposed substation to an already consented windfarm 110kV electrical substation and all ancillary works between the townland of Mountphilips, near Newport, and the townland of Knockcurraghbola, near Upperchurch. The grid connection was to continue mostly off road through lands to the north of, and roughly parallel to the R503.

4.1.6. In terms of proper planning and sustainable development, the Board considered that this proposal would be in accordance with European, national, regional and local planning policy and is generally in accordance with the strategic policy in relation to provision of such infrastructure.

4.1.7. Notwithstanding this, the Board was not satisfied that the information contained in the EIAR provides an adequate or robust description of the reasonable alternatives studied, which are relevant to the proposed development and its specific

characteristics. It was considered that the main significant effects on the environment are impacts to Hen Harrier and aquatic habitats and species. Impacts on aquatic habitat and species would be mitigated against through implementation of a range of project design environmental measures set out in the EIAR. However, the Board was not satisfied that, following mitigation, no significant residual negative impacts on the environment would remain as a result of the proposed with respect to Hen Harrier. It was noted that sufficient consideration has not been provided regarding the routing of the cable in local road network or consideration of alternative grid connection technologies such as overhead lines.

4.1.8. With respect to Appropriate Assessment, there remained reasonable scientific doubt that the proposed development would not lead to a reduction or loss of suitable foraging habitat or to the disturbance of the Hen Harrier within its sensitive roosting and breeding areas.

Tipperary County Council Reg. Ref: 10/5010462

4.1.9. Vodafone Ireland Ltd. granted permission in November 2010 for retention of a 30m telecommunications support structure and associated facilities at Knockmaroe to the east of the UWF Related Works site. Retention permission was again granted at this site in April 2017 under Reg. Ref: 17/600124.

4.2. Nearby windfarm applications considered for cumulative assessment

Existing Milestone Windfarm:

Tipperary County Council Reg. Ref: 12/510385 (PL22.242852 - withdrawn)

4.2.1. ABO Wind Ireland Ltd. applied for permission for a wind energy project of 5 no. wind turbines each with a maximum tip height of 126m, together with the construction of new access tracks and the upgrading of existing tracks, an electrical substation, borrow pit and associated works at Knockcurraghbola Commons (Milestone Windfarm directly south of UWF Related Works site).

4.2.2. A third party appeal on this case was withdrawn and permission was granted in February 2014.

Tipperary County Council Reg. Ref: 15/600566 (PL22.245544)

4.2.3. ABO Wind Ireland Ltd. were granted permission for development consisting of amendments and additions to an electrical substation associated with a previously permitted, five-turbine, wind farm development (Reg. Ref: 12/510385).

Tipperary County Council Reg. Ref: 14/10 (PL92.243611)

4.2.4. ABO Wind Ireland Ltd. was granted permission in September 2016 for 1 no. wind turbine (applied for 2 no.), new internal access roads, upgrading of existing internal roads, underground cables and associated works, (site to west of above).

Tipperary County Council Reg. Ref: 16/600701

4.2.5. Ten year permission granted to ABO Wind Ireland Ltd. To develop an electricity service, entailing of the laying of a 20kV underground cable from the proposed Inchivara Wind Farm to proposed 38V substation at Graniera and a 38kV underground cable from the proposed 38kV substation at Graniera to the existing Cauteen 110kV/38kV substation at Seskin, Co Tipperary. The development will consist of three phase underground electrical cables laid in ducts, with communications cable, draw pits, jointing bays, cable sheath sectionalising chambers, works to terminus substations and all associated works.

Bunkimalta Windfarm:

Tipperary County Council Reg. Ref: 13/510035 (PL22.241924)

4.2.6. The Board granted a 10 year permission for construction of a windfarm comprising 16 wind turbines and all associated site works above and below ground at Bunkimalta, Bauraglanna, Lackabrack, Keeper Hill (22/07/14). However, the Board's decision was quashed by Order of the Supreme Court.

4.2.7. The question was referred to the Court of Justice of the European Union (C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála) by the Supreme Court as to whether or not measures in a management plan could be considered as mitigation under Article 6(3) when assessing whether the proposal adversely affects the integrity of the SPA, or whether they were in fact compensatory and therefore relevant under Article 6(4). It was ruled in this case on 25th July 2018 as follows:

> *"Article 6 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning*

that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project, the part of the site that is in fact likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned; that fact falls to be considered, if need be, under Article 6(4) of the directive."

Tipperary County Council Reg. Ref: 16/600433

4.2.8. Permission was granted on 29th May 2017 for approximately 22.25km of 38kV underground cable between Bunkimalta windfarm and Nenagh 10kV substation to be installed primarily on public roads, (decision on windfarm annulled – PL22.241924).

Castlewaller Windfarm:

Tipperary County Council Reg. Ref: 11/510251

4.2.9. Permission granted on 18th April 2014 for a windfarm consisting of 16 turbines (total tip height of 145m), and ancillary works at Castlewaller approximately 12km west of the UWF Related Works site and 1km north of UWF Grid Connection.

4.2.10. An extension of duration of permission was granted on 18th July 2016 (Reg. Ref: 16/600472).

An Bord Pleanála Ref: ABP-304496-19

4.2.11. The Board decided on 19th September 2019 that works relating to alterations to wind turbine specification and locations set out in submission to planning authority on 28th April 2014 under Reg Ref: 11510251 (Reg. Ref 16/600472) is development and is not exempted development.

4.3. **Other Nearby Windfarm Applications**

Tipperary County Council Reg. Ref: 15/601088 (PL92.248010)

4.4. Ecopower Developments Ltd. was refused permission at a site located approximately 7km south of the current appeal site for 2 no. turbines with overall height of 150m.

4.5. The reason for refusal referred to policy TWIND4 of the South Tipperary County Development Plan and the fact that the proposal is within lands identified as being unsuitable for new wind energy development.

Tipperary County Council Reg. Ref: 18/601014

4.6. ABO Wind Ireland Ltd. granted permission in October 2018 for a 35m high meteorological mast at Knockcurraghboola.

Tipperary County Council Reg. Ref: 05/510024 (PL22.215223)

4.7. The Board granted permission to Ecopower Developments Ltd. at a site to the north-west of the subject site for 22 no. wind turbines, up to 80m hub height and up to 45m blade length. An extension of duration of this permission was refused in November 2011 (Reg. Ref: 11/510046).

4.8. It was stated under the reason for refusal that there have been significant changes in the Development Plan, namely Objective BNH19, Policy HERT29 Designated Environmental Sites and Policy HERT29(a) Protection of Designated Environmental Sites, such that the proposed development is no longer consistent with the proper planning and sustainable development of the area.

Tipperary County Council Reg. Ref: 06/511044

4.9. Magson Holdings Ltd. was granted permission to erect 3 no. wind turbines with hub height of 80m and rotor radius of 30m at Reiska, Kilcommon to the west of Upperchurch Windfarm. An extension of duration of this permission was refused in May 2012 (Reg. Ref: 12/510126). Reason for refusal as per above.

5.0 Policy Context

5.1. National Framework Plan, 2018

5.1.1. The National Planning Framework provides policies, actions and investment to deliver 10 National Strategic Outcomes (NSO) and priorities of the National Development Plan. Transitioning to a low carbon and climate resilient society is the main NSO that pertains to the proposed development. It is stated that new energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system.

5.1.2. Chapter 9 of the NPF: Realising Our Sustainable Future recognises the need to accelerate action on climate change for a low carbon energy future. In this regard, National Policy Objective 54 seeks to *"reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions."*

5.1.3. The transition to renewable sources of energy is an integral part of Ireland's climate change strategy as a means of reducing reliance on fossil fuels. Reflecting this, National Policy Objective 55 will *"promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050."*

5.2. Regional Spatial & Economic Strategy for the Southern Regional, 2020

5.2.1. This document is a 12-year strategic regional development framework that will facilitate the delivery of the NPF. The Southern Regional Assembly will support the implementation of the Climate Action Plan, 2019 by prioritising decarbonisation, resource efficiency and climate resilience.

5.2.2. The Strategy states that opportunities for both commercial and community wind energy projects should be harnessed. Objective (RPO 99) seeks *"…to support the sustainable development of renewable wind energy (on shore and off shore) at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines."*

5.3. North Tipperary County Development Plan, 2010 (as varied)

5.3.1. Variation 3 of the Development Plan incorporates the Tipperary Renewable Energy Strategy, 2016. Appended to this Strategy and to the Development Plan is the Tipperary Wind Energy Strategy, 2016 which sets out a planning framework for development of wind energy in the County. General Policy Statement TWIND 1 on Wind Energy Development states that *"it is the policy of the Council to support, in principle and in appropriate locations, the development of wind energy resources in County Tipperary. The Council recognises that there is a need to promote the development of 'green electricity' resources and to reduce fossil fuel dependency and greenhouse gas emissions in order to address the global issue of climate change, and to comply with European and International policies with regards to renewable and sustainable energy resources."*

5.3.2. The Wind Energy Strategy notes that significant parts of the Slievefelim-Silvermines Mountains and Hollyford Hills are subject to Natura 2000 designations and "secondary amenity area" designations in the Development Plan. A precautionary approach to wind energy development is therefore recommended in these areas whereby they will be designated as unsuitable for new wind energy development. However, this will not preclude the repowering of existing developments or construction of permitted developments.

5.3.3. Other policies of relevance are contained in the Development Plan relating to strategic road development (Policy TI3), sightline requirements (Table 10.1), and archaeology and cultural heritage (Policy LH16).

5.4. Climate Action Plan, 2021

5.4.1. This plan puts in place a pathway for taking decisive action to half emissions by 2030 and reach net zero by 2050, as set out in the Climate Act, 2021. It lists the actions for delivering climate targets and sets indicative ranges of emissions reductions for difference sectors including electricity, enterprise, homes and buildings, transport, agriculture, land use, the circular economy, public sector and governance. The Plan will be updated annually to ensure alignment with legally binding economy-wide carbon budgets and sectoral ceilings.

5.4.2. It is noted that electricity accounted for 17% of Ireland's greenhouse gas emissions in 2018; however, 33.7% of electricity produced in 2018 was from renewable sources. One of the most important measures in the Plan is to increase the proportion of renewable electricity up to 80% by 2030, and to reduce emissions from electricity by 62% – 81% from 2018 levels. It is also recognised that the decarbonisation pathway for electricity is challenging given the rapid growth in demand for power. The Climate Action Plan therefore provides a pathway to more rapid build out of renewable generation capacity (wind and solar), increased storage, and the deployment of zero-emissions gas.

5.5. National Adaption Framework, 2018

5.5.1. The Framework was developed under the Climate Action and Low Carbon Development Act, 2015. A number of Government Departments are required under this Framework to prepare sectorial adaptation plans to reduce the vulnerability of the country to the negative effects of climate change and to avail of the positive impacts. The Climate Change Adaptation Plan for Electricity and Gas Networks Sector has been prepared under the National Adaption Framework to identify the potential impacts of climate change on energy infrastructure, assess associated risks and set out an action plan for adapting to those impacts.

5.6. Natural Heritage Designations

5.6.1. The following designated sites are located in proximity to the permitted wind farm:

Site Name	**Site Code**	**Distance (nearest point to proposed development site)**
Slievefelim to Silvermines Mountains SPA	004165	140m west
Anglesey Road SAC	002125	2.9km south-west
Clare Glen SAC	000930	17km west
Glenstal Wood SAC	001432	17.1km west

Keeper Hill SAC	001197	10.9km north-west
Lower River Shannon SAC	002165	3km south-west
Lower River Suir SAC	002137	3km east
Grageen Fen and Bog NHA	002186	12.3km west
Mauherslieve Bog NHA	002385	4.7km west
Bleanbeg Bog NHA	002450	13km west
Bilboa and Gortnageragh River Valleys pNHA	001851	7.7km south-west
Clare Glen pNHA	000930	17km west
Derrygareen Heath pNHA	000931	15km west
Keeper Hill pNHA	001197	11km north-west
Glenstal Wood pNHA	001432	17km west

6.0 Submissions

6.1. Tipperary County Council

6.1.1. The following is a summary of the observations received on the planning application from the Council on 15th July 2021:

- Sets out relevant planning policy, natural heritage designations, cultural heritage, surface water, residential, landscape, roads and environmental matters pertaining to the proposed development.
- Notes that the applicant considers that proposed larger turbines will not increase the operational noise impact and that the turbines can be controlled at operational stage.
- Notes that the applicant has indicated that operational shadow flicker occurrence will be controlled to ensure that the proposed amendment will remain within the levels authorised at Upperchurch Windfarm.

- No change to turbine component haulage route and no change to traffic management requirements – District Engineer has no objection in relation to same.
- In general, environmental and ecological issues have been comprehensively dealt with and all proposed mitigation measures, commitments and recommendations are to be enacted as per the submitted Environmental Management Plan and Natura assessment.
- Planning Authority's view is that the purpose of the proposed development is to amend the turbine heights and met mast heights of the previously permitted turbines forming Upperchurch Windfarm. The proposed development is considered as enabling works to an already permitted development and principle of same would be viewed favourably.
- Conditions are suggested on compliance, archaeology, duration of permission, details of turbines and associated structures, roadways, construction management, excavation, pollution prevention measures, noise and financial contributions.

6.2. Prescribed Bodies

6.2.1. Submissions on the application were received from the following prescribed bodies:

Geological Survey Ireland (Department of the Environment, Climate and Communications)

- Encourage use of GSi datasets that may be useful for environmental assessment and planning process.
- There is a County Geological Site (CGS) in the vicinity of the proposed development site – Owenbeg Moraines in the Owenbeg Valley between Milestone and Upperchurch.
- There are no envisaged impacts on the integrity of the CGS by the proposed development.

Irish Aviation Authority

- Applicant/ developer should be directed to engage with IAA's Air Navigation Service Provider to assess the impact of the proposal (incorporating any cranes) on Shannon Airport's flight procedures and communication, navigation and surveillance equipment.
- Applicant should be conditioned to contact IAA to an agree aeronautical obstacle warning light scheme and provide as constructed co-ordinates, together with ground and tip height elevations.
- IAA should be notified of intentions to commence crane operations with at least 30 days prior notification.

Transport Infrastructure Ireland

- All structures on the proposed haul route through each Council administrative area should be checked by the applicant/ developer to confirm their capacity to accommodate any abnormal load proposed.
- Applicant/ developer should consult with all PPP companies, Motorway Maintenance and Renewal Contracts and road authorities over which the haul route traverses to ascertain any operational requirements such as delivery timetabling, etc. and to ensure that the strategic function of the national road network is safeguarded.
- Any temporary works to the national road network to facilitate turbine component delivery shall comply with TII publications and shall be subject to Road Safety Audit as appropriate. Works should ensure the ongoing safety of all road users.
- Any damage caused to the pavement of a national road shall be rectified in accordance with TII pavement standards and agreed with the road authority.

6.3. **Observers**

6.3.1. A total of nine observations on the planning application were received by the Board. The main points raised in these submissions as summarised as follows:

John Maher, Knockavoola

- More subsoil will be displaced and change in natural drainage will impact on water quality and flood risk in the catchment.

- Lowering of ground clearance would increase collision risk for low flying bats and bird species – no consultation is evident with Hen Harrier project team who have reported Hen Harrier death only last year from wind turbine collision.
- Observer's house is within 500m of nearest turbine and has not been properly considered in shadow flicker analysis – 4 x tip-height setback from nearest point of curtilage is not being observed.
- Recommended that noise levels produced by turbines be reduced to below 45 dB Lden.
- EIAR confirms that there are no studies of the effects on house prices in Ireland but assumes the market will behave as in the UK – this is unscientific.
- Potential for much greater noise and sound from this development, both audible and inaudible.
- Noise leads to increased stress hormones and prolonged activation response can lead to depression.
- Habitat fragmentation is clear in this development and the increase in turbine height will exacerbate this.

Kilcommon Community Council, Kilcommon

- Express their support for the proposal at Upperchurch Windfarm in the context of the increased community benefit fund which will result from the amended development, if it is built.

Martina & Jim O'Malley and others, Reiska

- Object to the windfarm due to cumulative visual impact, noise disturbance, property devaluation, proximity in relation to dwellings, disruption to enjoyment of homes, health concerns, environmental disruption, safety and comfort.

Nicola & Martina O'Keefe, Reiska

- Do not believe that turbines would be more than 500m from their dwelling.
- Concerned that additional wind turbines will affect sleep in quiet area.

- Visual impact will ruin natural landscape and turbines will be visually inescapable from dwelling.
- Concerns as to the unexplored and unrecorded health problems of having turbines close to dwellings. Turbines can have profound effects on anybody who has sensory issues.
- Significant increase in height of 50m for residents to constantly look at and listen to.
- Devaluation of property.

PJ Harrington, Chairman of Board of Management, Scoil Iosagáin

- Scoil Iosagáin supports the proposed amendment particularly because of the higher community benefit that will be paid during the operational lifetime of the turbines.

Michael Green, Upperchurch/ Drombane Development Association

- Supports the proposed amendment because of higher community benefit funding.

Upperchurch/ Drombane GAA Club, Brombane

- Increased turbine height will generate higher benefit for all organisations in the local area and will help GAA club development plans to get completed.

Vincent O'Dwyer, Knockeravoola

- Observer's dwelling is closer to the nearest turbine than recommended in national guidelines.
- Proposal overlooks observer's house and will have considerable visual impact.
- Windshere noise will be excessive and considerable light flicker will be projected onto observer's house.

Michael Greene, Chairperson, Upperchurch Childcare

- Supports the proposed amendment because of higher community benefit funding.

6.4. Further Responses

6.4.1. Correspondence was received by the Board from the applicant on **24th June 2021** referencing the judgement relating to the Derryadd Windfarm and requesting the Board to invite a submission on final turbine drawings and particulars and/ or seek further information from the applicant.

6.4.2. It is noted that the planning application includes a range of dimensions for the proposed turbines; however, the applicant has now chosen the final turbine design from this group, which is a wind turbine with hub height of 93.5m, rotor diameter of 117m and overall height of 152m.

6.4.3. The applicant submits that the assessment in the EIAR and NIS based on the original range of dimensions for the proposed turbines will apply with equal force to this turbine. The applicant states that they will provide any further information and public notice as necessary.

6.4.4. Further correspondence was received from the applicant on **13th September 2021** noting the project's success in the latest Government renewable support scheme (RESS 1), which requires that the windfarm is commissioned by 31st December 2023.

6.4.5. The Board requested further information from the applicant and a response was received on **26th November 2021**. I do not consider this response to be significant. The applicant confirms within the response that the chosen turbine has a hub height of 93.5m, rotor diameter of 117m and overall height of 152m (Vestas V117). This turbine model is illustrated within the plans and particulars submitted with the application to the Board and is the actual turbine depicted in scaled drawings. In addition, it is confirmed that the EIAR and Appropriate Assessment Report both describe a turbine of these dimensions. The chosen met mast is also illustrated at scale on drawings and described in the EIAR and Appropriate Assessment Report.

6.4.6. In terms of the assessment of the chosen turbine and met mast in the EIAR, it is confirmed that evaluations apply in equal force to all turbines within the design range, and that all options can be constructed within the framework of the authorised footprint, hardstands, foundations, access roads and haul routes associated with the permitted windfarm. The chosen turbine was used to evaluate the effects on

Population (community gain, commercial rates); Climate (emissions offsets); Land (windtake); Air (noise, shadow flicker); Biodiversity (birds & bats); and Landscape and Material Assets (telecommunications). The chosen turbine is also examined within Chapter 2 – Alternatives Considered and the chosen met mast is used within landscape photomontages.

6.4.7. The Appropriate Assessment Report, 2021 (NIS) includes an assessment of the chosen turbine and met mast alone and as part of the Whole Upperchurch Windfarm (UWF) Project, and in-combination with other projects and activities on the integrity of European Sites. It is confirmed that the worst-case scenario in the design range is the chosen turbine and associated met mast. There will be no change in terms of the extent of development footprint, the extent of construction, operational and decommissioning works and activities, and the location and presence of turbines. Thus, it is considered that the assessment for European Sites applies with equal force to all turbines in the design range. The variation in turbine size within a range is not material to the assessment of SCI species Hen Harrier in terms of collision risk with operating turbines. The assessment is made in the context of the increased blade swept area within the hub height and rotor diameter range up to 152m.

6.4.8. The Board also requested the applicant to provide responses to the issues raised in submissions in consultation with the planning authority/ prescribed bodies as necessary. The following is a summary of the main points raised in the applicant's responses:

Response to submission from Tipperary County Council

- Applicant welcomes positive support from the Council
- Applicant confirms that Vestas V117 wind turbine with capacity of 4.2MW has been chosen – allows for calculation of development contributions.
- Applicant confirms compliance can be achieved with suggested conditions from Tipperary County Council.

Response to submission from Transport Infrastructure Ireland

- All recommendations contained within this submission will be complied with by the developer.

Response to submission from Irish Aviation Authority

- Proposed wind turbines would be located outside the Outer Horizontal Surface of the Shannon Runway Obstacles Limitation Surfaces – Safety Compliance Section satisfied that there will be no interference and is also satisfied with intention to fully engage with IAA's Air Navigation Service Provider (ANSP).
- ANSP satisfied that there are no issues in relation to Flight Procedures at Shannon Airport and/ or ANSP Communications, Navigation or Surveillance facilities.

Response to submission from Geological Survey of Ireland

- Acknowledges use of GSI geo-heritage, bedrock geology, subsoils, groundwater aquifers, wells and springs datasets and groundwater bodies report within EIAR.
- No envisaged impacts on the integrity of County Geology Site Owenbeg Moraines.

Response to submission from Martina & Jim O'Malley

- Principle of 22 no. turbines at Upperchurch Windfarm has already been established.
- EIAR and AA Report concludes that there will be no material increase in the negative impact of Upperchurch Windfarm on any environmental topic as a result of the larger turbines and masts.
- There will be significant positive impact on Climate due to the almost doubling of production of clean, renewable electricity, and on Population & Human Health from the increase in Community Benefit Fund and commercial rates.
- Observer's dwellings range in distance from 1885m to 1890m from nearest turbine (T17) – wireframe and filled view of permitted and proposed turbines from these houses attached to response. These images and EIAR demonstrate that there is no significant increase in visual impact from these dwellings.
- Vestas V117 turbine was modelled in the noise impact analysis and a factor of 2dB was added to manufacturer's values – all houses within 900m of the nearest turbine were modelled and predicted noise impact [c.38 db(A)] will not significantly impact on residential amenity.

- Environmental disruption – EIAR, landscape illustration pack, Environmental Management Plan, mitigation measures and monitoring arrangements and NIS prepared for proposed development conclude that there are no adverse impacts/ effects.
- Devaluation of property – properties in question are c.1885m from the nearest turbine which mitigates any noise, shadow flicker and visual impacts to an insignificant level.
- Health concerns – no material adverse effects.
- 11 no. site notices were erected at every entrance at the nearest point on the public road.

Response to submission from Nicola & Martina O'Keefe

- At distance of 1885m, sleep will not be disrupted by noise from operating turbines.
- No health concerns associated with living in proximity to wind turbines have been identified in communities living around windfarms in Ireland.
- Proposed increase in turbine height is 25.4m and increase in met mast height is 13.5m.
- Area has been identified as suitable for wind energy development since the adoption of the North Tipperary Wind Capacity Strategy and Outline Landscape Strategy 2006.

Response to submission from Vincent O'Dwyer

- EIAR concludes that the difference in turbine size is more noticeable from greater distances, and this is a broad upland setting that can accommodate the larger turbines.
- Cumulative noise at observer's property is predicted to be 1db(A) lower than that predicted for the authorised turbines.
- Shadow flicker results are an over-estimate and developer commits to the installation of shadow flicker control modules that can eliminate shadow flicker at observer's house should a complaint be received.

Response to submission from John Maher

- No change to the impacts on water as a result of the proposed larger turbines and met masts.
- Due to elevated and hilly nature of the topography in the area, no significant fluvial or pluvial flooding would be expected. Sediment Control Plan forming part of the authorised windfarm results in no increased flood risk downstream.
- Authorised turbine ground clearance is 36.6m and proposed ground clearance is 35m – difference is insignificant in terms of collision risk.
- Amendment does not result in an increased significance of impact to bats – mitigation measures added to subject application to reduce rotational speed of blades when idling and adoption of best practice guidance.
- There is a low level of bird flight activity and documented avoidance behaviour towards wind farms of the key species at the site (hen harrier, golden plover, kestrels and buzzards).
- Developer commits to the installation of shadow flicker control modules that can eliminate shadow flicker at observer's house should a complaint be received.
- Cumulative noise at observer's dwelling is predicted to be 1db(A) lower than that predicted for the authorised turbines. There is no significant infrasound from wind turbines.
- There will be relatively minor and short-term losses for biodiversity as a result of the proposed development and long term and positive impacts on biodiversity from the greenhouse gas offset contribution.

Response to submissions from local community development associations

- Increase in community payment welcomed by Upperchurch/ Drombane Development Association, Upperchurch Childcare, Upperchurch/ Drombane GAA Club, Scoil Íosagáin and Kilcommon Community Council.
- Community Benefit Fund predicted to be €540,000 to be distributed annually for the duration of the life of the windfarm – minimum of 40% of the fund is reserved for non-profit community groups. Remaining 60% will be paid to households within 1km, administration and initiatives successful in the annual application process and near neighbour payments.

7.0 Assessment

7.1. Having regard to the requirements of the Planning and Development Act, 2000 (as amended), this assessment is divided into three main parts, the planning assessment, environmental impact assessment and appropriate assessment. In each assessment, where necessary, reference is made to issues raised by all parties. There is an inevitable overlap between the assessments, for example, with matters raised falling within both the planning assessment and the environmental impact assessment. In the interest of brevity, matters are not repeated but such overlaps are indicated in subsequent sections of the report.

8.0 Planning Assessment

8.1. The Board upheld Tipperary County Council's decision to grant permission for Upperchurch Windfarm comprising 22 wind turbines, 2 no. meteorological masts, access roads, electrical substation compound, control buildings and ancillary works {Reg. Ref: 13/510003 (PL22.243040)}. The turbines permitted under this application have a tip height of 126.6m.

8.2. The current proposal seeks to increase the permitted tip height of the 22 no. permitted turbines on site from 126.6m to 152m. The amended turbines will have a hub height of 93.5m and rotor diameter of 117m. Permitted 80m met masts on site are proposed to increase in height to correspond with the hub height of the new turbines. The output of each turbine will increase from the permitted range of 2-3MW to 4.2MW. Renewable energy electricity production from the larger turbines will result in the avoidance of 101,250 tonnes of CO_2e per annum, up from 56,250 tonnes of CO_2e per annum from the permitted turbines.

8.3. The proposed development relates to the turbine and met mast structures only and there will be no changes to the location of the turbines/ masts. Turbine foundations, crane hardstands, windfarm roads, the windfarm electrical substation, construction compounds, construction borrow pits and ancillary works will not be amended from the permitted development.

8.4. Having regard to the above, and in view of national, regional and local policy guidance, and the submissions/ observations received, I consider that the main issues arising in this case can be addressed under the following headings:

- Development Principle/ Policy context
- Materiality of proposed amendments
- Other issues raised in submissions
- Environmental Impact Assessment
- Appropriate Assessment
- Overall Conclusion

8.4.1. **Development Principle/ Policy Context**

8.4.2. A detailed sectoral roadmap has been set out in the Climate Action Plan, 2021 that includes an aim to increase the proportion of renewable electricity up to 80% by 2030. It is recognised that this will require very substantial new infrastructure including wind and solar farms, grid reinforcement, storage development and interconnection. The proposed development will enable the renewable energy output of the consented Upperchurch Windfarm to rise substantially. There will be an increase in electricity production from 150 million kWh to 270 million kWh per annum, and an increased avoidance of CO_2 emissions from 56,250 tonnes of CO_2e per annum to 101,250 tonnes of CO_2e per annum. The proposed development will therefore contribute to an overarching aim of the Climate Action Plan of tackling climate breakdown by reducing greenhouse gas emissions and by contributing towards the provision of 8GW of onshore wind capacity up to 2030.

8.4.3. Transitioning to a low carbon and climate resilient society is a National Strategic Outcome of the National Planning Framework. Reflecting this, National Policy Objective 55 will seek to *"promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050."* It is therefore recognised that the transition to a low carbon energy future requires a shift from predominately fossil fuels to predominately renewable energy sources.

8.4.4. At a regional level, the Regional Spatial & Economic Strategy for the Southern Region, 2020 supports the delivery of the NPF and implementation of the Climate Action Plan. Objective (RPO 99) seeks *"…to support the sustainable development of renewable wind energy (on shore and offshore) at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines."*

8.4.5. The Tipperary Renewable Energy Strategy, 2016 is now incorporated into the North Tipperary County Development Plan 2010 (as varied) and the Tipperary Wind Energy Strategy, 2016 forms part of the Renewable Energy Strategy. All turbines are within an area identified as being "open for consideration" for wind energy development. It is noted that there is a concentration of existing and permitted windfarms in the Slievefelim-Silvermines and Hollyford Hills uplands. Large parts of these uplands are designated as European Sites or as Secondary Amenity Areas in the Development Plan and it is recommended in the Wind Energy Strategy that there should be a precautionary approach and that these areas should be designated as unsuitable for new wind energy development.

8.4.6. Notwithstanding this, the principle of a windfarm development has already been established and there are no proposals to change the windfarm footprint or turbine foundations. The proposal is not therefore *new* wind energy development for the purposes of assessing suitability within this area. Policy TWIND4.2 states that *"proposals in Areas 'Open for Consideration' shall be sited having consideration to the landscape sensitivity and capacity analysis set out in the Tipperary Landscape Character Assessment 2016 and the provisions of the County Development Plan (as varied) in relation to landscape (Chapter 7). All applications shall have regard to the visual impact of turbines and ancillary development (such as access roads, boundary fencing, control buildings and grid connections)."*

8.4.7. Issues relating to the siting of the windfarm, landscape sensitivity and capacity analysis were addressed in the previous planning application. The current proposal is for the enlargement of the 22 no. permitted turbines from 126.6m in height to 152m and for an increase in the height of 2 no. met masts from 80m to 93.5m. It is concluded in the Environmental Impact Assessment that the proposed larger structures will not appear over-scaled relative to the broad scale underlying upland landscape and will not result in any material change in the impact of the permitted

windfarm on landscape and visual amenity. This issue is addressed in further detail below.

8.4.8. Overall, I consider that the proposed larger turbines and met masts are in compliance with the strategic objectives of the national and regional policy on renewable energy. Finally, at a local level, it is a core aim of the Development Plan, as set out in Chapter 8: Climate Change, Energy & Flooding, *"to ensure that the county continues to be a leader in addressing climate change through the facilitation of appropriately located renewable energy developments and through supporting energy efficiency in all sectors of the economy."* The proposed development will deliver a significant increase in renewable energy production and an associated reduction in CO_2e emissions by optimising the production of renewable energy on site without the need for significant new infrastructural works, thereby helping to address climate change at a local level. The proposal would therefore be acceptable in principle and in accordance with the proper planning and sustainable development subject to an assessment of the issues addressed hereunder.

8.4.9. **Materiality of the Proposed Amendment**

8.4.9.1. It has evaluated in the EIAR that the only significant impact, positive or negative, arising from the proposed larger turbines and met masts amendment is the change in climate effects. The permitted windfarm would have a total output of between 44-66MW (2-3MW turbines) and the proposed larger turbines will increase the total output to 92.4MW. Overall, the proposed development will have a positive and significant impact due to the increased production and export of clean renewable energy electricity to the National Grid. It should also be noted that the approved grid connection allows for 94MW of capacity under the grid connection offer and the proposal will also optimise the grid capacity available for the project.

8.4.9.2. The EIAR also addresses the factors that could be adversely impacted upon by the proposed larger turbines and masts. In my opinion, the most significant issues arising from the proposal are potential increased noise and shadow flicker, and impacts on biodiversity, the landscape and population and human health.

8.4.9.3. The proposed development will result in the change of the maximum turbine tip height from 126m to 152m. The hub height will increase from 81.6m to 93.5m and

the rotor diameter will increase from c. 90m to 117m. It is proposed to amend the 2 no. met masts on site from 80m high tubular tower masts to 93.5m high lattice towers. There will be no changes to the locations of any of these structures. It should be noted that there will be no requirement to amend the permitted size and location of the crane hardstands, turbine foundations, windfarm roads, windfarm electrical substation, construction compounds, construction borrow pits and ancillary works (site entrances, watercourse crossings, drainage system, fencing, forestry/ hedgerow removal and replanting) in order to facilitate the construction of the proposed larger turbines. The permitted foundations and hardstanding areas were designed and adequately sized with inbuilt headroom to cater for larger turbines.

8.4.9.4. Having regard to the above, the proposed larger turbines and met mast will not result in any change in impact from the permitted turbines, or cumulatively with the Whole UWF Project, in terms of land and soils, water, air (air quality, construction emissions, traffic and EMF), and material assets (public roads and built services). The effects on these environmental factors will remain not significant and there have been negligible changes in land use, water quality, ambient air quality and the public road network since the proposal for Upperchurch Windfarm was first assessed and over the intervening period under the various environmental studies for the different elements of the Whole UWF Project.

Noise & Shadow Flicker

8.4.9.5. In terms of the potential for increased noise and shadow flicker from the larger turbines and met masts, these issues are assessed in detail under Section 9.7 of the EIA below. It is concluded that there is no potential for increased noise from proposed larger turbines above the permitted turbines owing to modern turbine design with serrated blade edges generating lower aerodynamic noise. There are two locations where predictive cumulative noise parameters set out in the condition attached to the parent permission are exceeded for the proposed larger turbines. Noise reduced operational modes will be incorporated to restrict noise levels to within authorised limits as per the Board's current standard noise condition, and the developer can also be required to submit a noise compliance monitoring programme, including mitigation measures such as de-rating of particular turbines. I would therefore be satisfied that the proposed larger turbines will not give rise to noise nuisance at the nearest noise sensitive locations.

8.4.9.6. Turbine technology has advanced in recent years so that modern turbines can be remotely and automatically controlled, and this can be used to limit or eliminate the occurrence of shadow flicker by shutting the turbines down. It has been calculated that shadow flicker could occur above authorised thresholds at certain locations and therefore it is proposed to install shadow flicker control modules to ensure that shadow flicker does not exceed 30 hours per year or 30 minutes per day at these locations. If a complaint occurs, turbines can be shut down to eliminate shadow flicker during the times in question. Subject to the attachment of a condition reflecting same, I consider that the proposed development will not give rise to the undue shadow flicker impacts from nearby dwellings.

Biodiversity

8.4.9.7. The impact of the proposed larger turbines and met masts on biodiversity is comprehensively addressed under Section 9.6 of the EIA and Section 10 – Appropriate Assessment. There will be no change in the impacts on aquatic habitats or species, terrestrial habitats, amphibians, reptiles, invertebrates or mammals, nor displacement/disturbance or loss of habitat to bats and birds from the proposed larger turbines and met masts beyond that already authorised for Upperchurch Windfarm. Furthermore, there has been negligible changes in habitat and species composition at the windfarm site or in downstream watercourses between the initial 2011 surveys and the 2020 surveys for the proposed development.

8.4.9.8. The main potential for impacts on biodiversity arising from the proposed larger turbines relates to increased operational stage collision risk for bats and birds. The dominant species of bat recorded on site were Common pipistrelle and Soprano pipistrelle, making up 91% of calls in the 2020 surveys. These species mainly fly at heights below the blades of the larger turbines. Leisler's bats typically fly at higher heights; however, the windfarm site is used relatively infrequently by this species. Notwithstanding this, it is proposed to reduce the rotational speed of turbine blades when idling to reduce collision risk to bats. It is therefore not considered that the proposed larger turbines will increase the collision risk to bats to a material extent.

8.4.9.9. There will be no operational collision risk to passerine birds as these species generally fly at low heights. Hen harrier continue to use the site sporadically and habitat suitability remains sub-optimal for this species. There are no recorded winter

roosting sites within 2km of the windfarm site and no turbines within the core foraging range of a nest (2km). There is also low flight activity for Kestrel and studies have demonstrated that this species, along with Buzzard and Golden Plover, show significant avoidance behaviour of operational wind turbines. It is therefore considered that the proposed larger turbines will not materially increase collision risk to birds. In addition, optimal foraging, nesting or roosting habitat does not occur on site for raptors, waders or waterbirds and there are no migratory commuting routes recorded within the windfarm site.

Landscape and Visual

8.4.9.10. Section 9.9 assesses the visual impact of the proposed larger turbines and met masts on the landscape character of the surrounding area. A series of photomontages were prepared from key viewpoint locations to consider the visual impact significance of the proposed larger turbines compared to the permitted turbines.

8.4.9.11. The proposed larger turbines will be the equivalent to a 20% increase in scale; however, this variation will be more difficult to discern than the dimensional difference would suggest. Furthermore, the windfarm site is within a broad undulating upland setting where the increase in turbine dimensions can be readily absorbed. I would therefore be satisfied, having visited the site and surroundings, and studied the photomontages, that the proposed larger turbines will not appear over-scaled or incongruous in the context of the landscape or existing turbines in the vicinity.

Population and human health

8.4.9.12. The most significant impact in relation to the local economy will by the increased community benefit fund that will directly benefit the local community. This is reflected in a number of observations submitted in support of the proposed development. There will also be indirect benefits in terms of increased rates payments to the local authority and higher landowner payments.

8.4.10. **Other issues raised in submissions**

8.4.10.1. A number of issues have been raised in observations to the Board that are addressed within the Planning Assessment, Environmental Impact Assessment and

Appropriate Assessment. These include matters relating to drainage, collision risk, noise, habitat fragmentation, visual impact and human health. These issues are adequately addressed in other sections of the report and in my opinion are not sufficient in terms of significance to warrant refusal of the proposed development. Certain impacts raised in observations would in any event occur for the permitted development should permission be refused for the larger turbines and met masts.

8.4.10.2. A number of observations have been submitted from local community groups (school, childcare, sports club) outlining their support for the proposed development. These bodies would benefit for the community benefit fund associated with the windfarm, which is based on a €2 per MW hour of electricity produced. A higher output at the windfarm will substantially increase the payments to this fund.

8.4.10.3. Observations on the application were received from the Irish Aviation Authority and Transport Infrastructure Ireland. Matters raised in these submissions relating obstacle warning lighting and haulage routing can be addressed by way of condition.

8.4.10.4. Finally, the applicant was invited to submit further information to clarify the dimensions of the larger turbines. The applicant confirmed that the chosen turbine has a hub height of 93.5m, rotor diameter of 117m and overall height of 152m (Vestas V117). It is also confirmed that the EIAR and Appropriate Assessment Report both describe a turbine of these dimensions. The chosen met mast is illustrated at scale on drawings and is described and fully assessed in the EIAR and Appropriate Assessment Report.

9.0 Environmental Impact Assessment

9.1. Introduction

9.1.1. The proposed development comprises the amendment of the uppermost tip height of the 22 no. wind turbines permitted under Reg. Ref: 13/510003 (PL22.243040). The permitted turbines have a tip height of “up to 126.6m” and the proposed larger turbines will have a tip height of 152m. It is also proposed to increase the height of the permitted 2 no. meteorological masts to correspond with the proposed hub height of the amended larger turbines. The permitted met masts have a height of 80m and

the larger masts will be 93.5m. The 93.5m hub height results in a turbine rotor diameter of 117m.

9.1.2. The permitted Upperchurch Windfarm forms part of the Whole Upperchurch Windfarm (UWF) Project, which also includes UWF Grid Connection (ABP-306204-19), UWF Related Works (Reg. Ref: 18/600913/ ABP-303204-19), UWF Replacement Forestry (authorised forestry licence) and UWF Other Activities (no planning required).

9.1.3. Having regard to the cumulative nature of all elements of the Whole UWF Project and pursuant to the criteria set out under Schedule 5 of the Planning and Development Regulations, 2001 (as amended), an Environmental Impact Assessment Report has been prepared for the Whole UWF Project, including the proposed larger turbines and met masts amendment the subject of this application. Part 2 of Schedule 5 of the Regulations sets out development for the purposes of Part 10 and includes *"installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts."*

9.1.4. Directive 2014/52/EU amending the 2011 EIA Directive was transposed into Irish legislation on 1st September 2018 under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018. The EIAR was submitted to the Board on 7th May 2021 and is therefore assessed under the provisions of the new Directive.

9.1.5. An examination has been carried out of the information presented by the applicant, including the EIAR, and the submissions made during the course of the application for approval. A summary of the results of the submissions by the Planning Authority, prescribed bodies and other observers has been set out in Section 6 of this report. The main issues raised specific to EIA can be summarised as follows:

- Impacts on Population and Human Health.
- Impacts to Air from noise and shadow flicker and climatic impacts.
- Impacts to Biodiversity from operational stage effects to bats and birds.
- Impacts on the Landscape.

9.1.6. These issues are addressed below under the relevant headings, and as appropriate in the reasoned conclusion and recommendation including conditions.

9.1.7. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality, and that the information contained in the EIAR and supplementary information provided by the applicant, adequately identifies and describes the direct and indirect effects of the proposed development on the environment, and complies with article 94 of the Planning and Development Regulations 2000, as amended.

9.2. EIAR Content and Structure

9.2.1. The EIAR is presented in three volumes comprising the non-technical summary, the main report, and a landscape illustrations pack. In general, I consider that the content and scope of the EIAR is acceptable and in compliance with the EIAR Directive and the Planning and Development Regulations, 2001 (as amended). It should be noted that no likely adverse impacts were identified in the EIAR. The only significant impact identified is the significant indirect positive effects to climate.

9.2.2. The non-technical summary gives a concise synopsis of the EIAR and is written in language that can be easily understood. I am satisfied that the EIAR adequately describes the proposed development to include information on the site, design and size of the site and the proposed development. The applicant has also carried out an assessment of reasonable alternatives relevant to the proposed development and its specific characteristics. A baseline scenario with and without the proposed development is assessed and a description of the factors likely to be significantly affected by the proposed development are set out, together with any direct, indirect, secondary, cumulative, transboundary, and short-long term effects of the proposed development. A description of forecasting methods including difficulties encountered and the main uncertainties, as well as measures envisaged to avoid, prevent, reduce or off-set significant adverse effects and any monitoring arrangements are included for both construction and operational phases. The vulnerability to risk of major accidents is also described, along with any measures to prevent or mitigate the significant adverse effects on the environment. Details of scoping consultations are included and there is an adequate list of experts who contributed to the EIAR.

9.2.3. Overall, I am satisfied that the information provided is reasonable, up to date and sufficient to allow the Board 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.

9.3. Reasonable Alternatives

9.3.1. The EIAR must include a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, as well as an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.

9.3.2. The previously considered alternatives for other elements of the Whole UWF Project are set out, together with the alternatives considered for this current planning application. It should be noted that the approved grid connection allows for 94MW of capacity under the grid connection offer and the enlarged turbines would have a maximum capacity of 92.4MW.

9.3.3. In order to optimise generation capacity, alternatives for additional turbines or larger turbines were considered within the EIAR for the Upperchurch Windfarm site. Both these options would deliver greater generation capacity, which would be desirable within the context of targets and objectives of the Climate Action Plan, 2021 and the extra 50MW of grid capacity available for the project.

9.3.4. The option to provide additional turbines in the area introduces the potential for greater cumulative water quality, visual and residential amenity impacts, as well as increased displacement/ collision risk. There would also be a greater magnitude of excavations and construction works/ activities.

9.3.5. In terms of the provision of larger turbines, significant amounts of renewable energy could be supplied to the national grid without the need for additional infrastructure. It is noted that larger turbines tend to have a similar noise output to smaller older models due to their serrated blades, and moreover, noise and shadow flicker can be better controlled within modern turbines. On the one hand, addition turbines on site would result in higher land rental payments; however, larger turbines would increase benefit funds to the local community, and this has been highlighted in several

submissions to the Board. It was considered that the larger turbines are the better environmental option, and this was examined further with alternative turbine sizes.

9.3.6. Turbines sizes of 126.6m (authorised), 145m, 152m and 170m were considered and an operational stage assessment was carried out of the impacts from an increased turbine height in terms of climate, biodiversity, landscape, air and population and human health. Other environmental factors were scoped out as the larger turbines would be developed on the authorised footprint. Alternative heights for the larger met masts were also scoped out as they must correspond to the hub height of the turbines.

9.3.7. Chapter 2 of the EIAR concludes that there will be a positive impact through increased CO_2e impacts from the larger turbines and greater community fund payment rates. The larger 170m turbines would have the greater impact in this regard. However, these turbines give rise to the potential for significant visual impacts on the landscape. In general, all larger turbine sizes would result in no change to environmental impact in terms of noise, shadow flicker and biodiversity, including bats and hen harrier collision risk.

9.3.8. The 170m turbines were not selected as the preferred turbine size alternative due to the potential for significant impacts to landscape. There was no material difference in adverse effects when the 145m turbines were compared to the 152m turbines. The 152m turbines were therefore chosen as the most suitable alternative turbine size. It is also acknowledged in the EIAR that a 145m turbine would also be suitable for the site should the Board decide if this turbine size is more appropriate.

9.3.9. In general, all reasonable alternatives that are relevant to the project and its specific characteristics are clearly presented in the EIAR. The main reasons for the chosen proposal and the development of the design process are set out, together with the background for the chosen option. I would be satisfied that this section of the EIAR is sufficient to comply with the provisions of Paragraph 1(d) of Schedule 6 of the Planning and Development Regulations, 2001 (as amended).

9.4. **Likely Significant Effects on the Environment**

9.4.1. This section of the EIA **identifies, describes and assesses** the potential direct and indirect effects of the project under each of the individual factors of the environment

(population and human health; biodiversity; land, soil, water, air and climate; material assets, cultural heritage and the landscape; and the interactions between these factors). Baseline characteristics, cumulative information and an evaluation of impacts on each sensitive aspect are set out, together with mitigation measures and residual impacts. The focus of the EIAR is the evaluation of the impact of changing the previously permitted turbines and masts to larger turbines and masts and this evaluation looks at the effects of the proposed amendments alone and as part of the Whole UWF Project. The passage of time since earlier assessments on site is considered for each environmental topic.

9.5. Population and Human Health

9.5.1. Chapter 12 of the EIAR describes the general characteristics of human activity and health status in the study area. This chapter sets out the baseline environment for population and human health (including passage of time), as well as the development works and activities for the authorised project and the impact of the proposed larger turbines and met masts on population and human health. The cumulative impact with other projects and activities is assessed and conclusions are drawn in terms of impact during construction, operational and decommissioning stages.

9.5.2. Upperchurch Windfarm is located in the Upperchurch, Foilnaman and Gortakelly electoral divisions and the Whole UWF Project study area includes a total of 23 no. electoral divisions. The surrounding rural area is sparsely populated with isolated residences and farmsteads and the nearby villages of Upperchurch to the east and Kilcommon to the west. There are 135 no. local residences within 1170m (10 rotor diameters) of the proposed windfarm.

9.5.3. The area is also used by walkers/ cyclists, road users, farm/ forestry workers, etc. The Eamonn a Chnoic Loop, Ormond Way and Ormond Way Cycle Route are located in the local study area and Slieve Felim Way is within the cumulative study area. Grassland agriculture and commercial forestry are the primary land uses in the area and there is a higher than State average proportion of workers engaged in agriculture and forestry and fishing in the area.

Characteristics of the Proposed Development

9.5.4. Planning permission is sought for amendments to the windfarm development granted under Reg. Ref: 13/510003 (PL22.243040). The proposal seeks to increase the height of the 22 no. permitted turbines from 126.6m to 152m. The proposed increase in height of the meteorological masts to 93.5m will correspond to the revised hub height of the larger turbines. There will be no changes to the remaining elements of the permitted windfarm.

9.5.5. The construction period for Upperchurch Windfarm is expected to take 12-18 months and approximately 277 persons will be engaged in civil, electrical, project management, legal and financial services, material supply and component deliveries. Normal working hours will be 07:00 to 19:00 hours Monday to Friday and 08:00 to 16:30 hours on Saturdays. It is proposed that the windfarm will operate for 25 years from commissioning. There will be eight full time jobs during the operational phase of the windfarm.

Predicted Impact of the Proposed Development

9.5.6. The impact on population and human health of the proposal to increase the height of the turbines and met masts is evaluated in the EIAR on its own and with respect to the potential of the proposal to change the impact of the permitted windfarm. The assessment addressed impact on population (local economy) and human health (local residents & community, transient people) for each of the stages of the windfarm development. The main findings are summarised as follows:

Population (local economy)

- Gross value added to business & employment opportunities – no impact from amendment or change to windfarm impact. Proposal only relates to structures and no requirement for additional construction works personnel/ materials/ lands. No material change to the slight positive local economy or health benefits reported.
- Business disruption – no impact from amendment or change to windfarm impact. Proposal does not require road works or additional construction traffic.

- Reduction in tourism revenue – no changes to extent, duration or location of construction activities. No material change in visual impact along walking routes and amenity views.
- Strengthening of local economy – increase in renewable energy generation output would result in larger community benefit fund from €300,000 to c. €540,000 per annum. Larger turbines will also increase landowner payments and rate payments to council will increase. There will be induced spending and significant socio-economic health benefits.

Human health (local residents & community, transient people)

- Increased employment – no impact from amendment or change to windfarm impact.
- Potential impact during construction stage on health as a result of contamination of well water or public water supplies; cardio and respiratory health from changes in air quality; mental stress and exposure to noise and vibration; and increased risk of road accidents - no impact from amendment or change to windfarm impact.
- Potential impact during operational stage upon mental health (stress, annoyance and sleep disturbance) and exposure to noise, shadow flicker or vibration – proposed larger turbines will not increase noise levels and more advanced turbine technology will control turbine operation and potential for shadow flicker. Changes to authorised windfarm will be neutral.
- Potential impact on health as a result of exposure to EMF – impact of amendment will not be significant and changes to authorised windfarm will be neutral.
- Positive impact on health due to increase in renewable energy generation, carbon emission offset and energy security – increase enough to supply 67,285 homes annually with average domestic electricity needs, offsetting 56,250 to 101,250 tonnes of CO_2 annually. Benefits to health and wellbeing will remain imperceptible.
- Increased employment which is a wider determinant of health – no impact from amendment or change to windfarm impact.

- Increased risk of injury from traffic road accidents – no impact from amendment or change to windfarm impact,
- Decommissioning stage - no impact from amendment or change to windfarm impact.

9.5.7. There will be no change in cumulative construction stage impacts with other nearby planned windfarms. There is also no potential for cumulative positive impacts in terms of community benefit and landowner payments due to the large separation distances between Upperchurch Windfarm and other windfarms. The combined rates of payment to Tipperary County Council will have an increased positive impact.

Mitigation Measures

9.5.8. The range of construction and operational stage mitigation measures and the environmental protection measures and monitoring arrangement for the Whole UWF Project will be implemented for the larger turbines and met masts.

9.5.9. Additional mitigation measures for the proposed larger turbines and met mast amendment that pertain to population and human health include the following:

- Installation of shadow flicker control module to ensure that shadow flicker does not exceed the permitted levels of 30 hours per year or 30 minutes per day at dwellings, either from Upperchurch Windfarm alone, or cumulatively with Milestone Windfarm.
- Applicant commits to set shadow flicker control modules to eliminate shadow flicker completely should a complaint be received from a house within the study area.
- Upperchurch Windfarm Environmental Management Plan 2021 – updated EMP which includes the proposed larger turbines and met masts amendment and will be used to communicate environmental protection measures.

9.5.10. Chapter 14 of the EIAR sets out all the mitigation measures, monitoring arrangements and planning conditions for each element of the Whole UWF Project. The following measures for the Whole UWF Project to be carried out through Environmental Management Plans are of relevance to Population & Human Health:

- Mitigation Measures for Upperchurch Windfarm WF-MM 01 to WF-MM-21, WF-MM-39, and WF-MM-47 to WF-MM-53, and Monitoring Arrangements WF-MA-01, WF-MA-06 to WF-MA-09 and WF-MA-12 to WF-MA-15;
- Project Design (mitigation) Measures for UWF Related Works RW-PD-01 to RW-PD-04, RW-PD-18 to RWPD-21 and RW-PD-10;
- Project Design (mitigation) Measures for UWF Grid Connection GC-PD-04 to GC-PD-13 and GC-PD-16.

Residual Impacts

9.5.11. Residual impacts will be positive in nature.

Conclusions on Population and Human Health

9.5.12. Overall, it is considered that there will be no significant adverse impacts on population and human health during the construction or operational phases as a result of the proposed larger turbines and met masts. There will be positive changes on local health and economy due to increases in community benefit payments and associated benefits in terms of improved physical, mental and social health and wellbeing. This was recognised in submissions from Kilcommon Community Council, the Chairman of Board of Management of Scoil Iosagáin, Upperchurch/ Drombane Development Association, Upperchurch/ Drombane GAA Club, and the Chairperson, Upperchurch Childcare.

9.5.13. Commercial rate payments to Tipperary County Council will also increase, with direct benefits to local projects, programmes and infrastructure and indirect benefits on population and human health through strengthening of the economy. The proposed development will contribute towards an increase in renewable energy generation, carbon emission offset and energy security, resulting in a positive contribution towards national policy and global targets inherently linked to sustainability, health and wellbeing.

9.5.14. I am satisfied that the impacts identified for the proposed development would be avoided, managed or mitigated by mitigation measures forming part of the Whole UWF Project, as well as suitable conditions.

9.6. **Biodiversity**

9.6.1. Chapters 8 of the EIAR evaluates the impacts on biodiversity of changing the permitted turbines and met masts to larger structures. The cumulative effects of the proposed amendments on the Whole UWF Project are also assessed. The sensitive aspects considered in this chapter are designated sites, aquatic habitats and species, and terrestrial habitats and species, including non-volant mammals, birds and bats. The Board is advised that an Appropriate Assessment is carried out in Section 10, which considers if the proposed larger turbines and met masts, individually or in combination with the Whole UWF Project and with other plans and projects would adversely affect the integrity of any European site, in view of each relevant site's Conservation Objectives.

9.6.2. Baseline information was sourced from site investigations and field surveys, online resources including the National Biodiversity Data Centre, NPWS, IFI, and reference documents for other elements of the Whole UWF Project. These reference documents were reviewed in the context of current baseline conditions having regard to the passage of time. Bird, bat, habitat, watercourse, otter, badger and other mammal surveys were carried out for other elements of the Whole UWF Project. Additional bat surveys were carried out in 2020 and ornithological surveys were conducted at the wind farm site in 2019 & 2020. The 2020 & 2019 bird surveys included details of UWF hen harrier and other bird sightings and the habitat over which the birds were observed during the 2019 and 2020 breeding seasons.

9.6.3. The permitted Upperchurch Windfarm is located mainly on upland agricultural lands. Some turbines are proposed within wet grasslands and conifer plantation. A small amount of forestry felling is required. Supporting habitat has not materially changed since 2012/ 2013. The windfarm site is located mostly in the catchment of the River Suir, with a smaller part of the site to the east, together with most of the grid connection situated within the Shannon catchment. No works are proposed within the Slieve Felim to Silvermines Mountains SPA. The R503, along which the grid connection is proposed, passes by and through sections of the Lower River Shannon SAC and Slieve Felim to Silvermines Mountains SPA.

<u>Characteristics of the Proposed Development</u>

9.6.4. The subject development is for the purposes of increasing the height and output of the 22 no. turbines permitted under Reg. Ref: 13/510003 (PL22.243040). An increase in turbine hub height will also require a commensurate increase in height for the permitted met masts on site.

9.6.5. There are no proposals to change the locations of the permitted turbines/ met masts. Crane hard standings and foundations were designed with headroom inbuilt and are adequately sized to cater for the larger turbines. No additional excavation, material importation, forestry felling or hedgerow removal is required and existing haul routes, site access roads and drainage systems will be utilised. Emissions, site activity and use of machinery will also be the same as per the permitted development. The 2013 Sediment & Erosion Control Plan and the 2013 Ecological Management Plan will not require changes for the larger turbines and met masts; however, the 2013 Preliminary Environmental Management Plan has been updated to the Upperchurch Windfarm Environmental Management Plan 2021.

9.6.6. Other elements of the Whole UWF Project include the authorised underground grid connection from the substation on site (as amended) over a distance of 28.9km to a new substation at Mountphilips. UWF Related Works were permitted by the Board concurrently with the authorised grid connection. UWF Replacement Forestry will occur on 6 hectares of agricultural lands as part of the Whole UWF Project and UWF Other Activities will include haul route activities, the Upperchurch Windfarm Hen Harrier Scheme and monitoring activities.

Potential Impact of the Proposed Development

9.6.7. The predicted impacts on each of the identified sensitive aspects arising from the proposed larger turbines and met masts amendment, both alone and cumulatively with other aspects of the Whole UWF Project are summarised as follows:

- ***Aquatic habitat and species*** – no impact from proposed amendment. Proposal only relates to turbine and met mast structures and there is no requirement for additional excavations, vegetation clearance or forestry felling.
- No change to overall windfarm impact – no change to excavated footprint, turbine foundations or hardstanding areas, groundworks or storage of soil, reinstatement works, watercourses, temporary structures, forestry felling, use of machinery, construction personnel, or duration of construction works.

- No change to operational stage works, activities or requirements.
- No change to decommissioning works, activities or requirements.
- ***Terrestrial habitat*** – As above regarding impact from proposed development.
- No change to windfarm impact – No change to extent of habitat removal, vegetation clearance or tree felling.
- No flora protection species within footprint of development (updated 2020).
- ***Amphibians, reptiles and invertebrates (Marsh Fritillary)*** - As above regarding impact from proposed development.
- No change to windfarm impact.
- ***Non-volant mammals*** - As above regarding impact from proposed development.
- No change to windfarm impact.
- No change to works at watercourses.
- Potentially active outlier badger sett identified during 2020 surveys – sett is c. 160m away from closest turbine and c.115m away from closest part of the construction works boundary. Potential for significant disturbance/ displacement effects (construction or operation) can be excluded.

9.6.8. It is evaluated that the proposed larger turbines and met masts amendment will not result in any changes to the cumulative impacts of the Whole UWF Project with other projects and activities in terms of impact on aquatic habitats and species; terrestrial habitat; amphibians, reptiles and invertebrates; and non-volant mammals. It is also noted that the quality of the baseline environment and species that occur has remained largely unchanged between 2012 and 2020.

- ***Bats*** - no impact from proposed amendment and no change to overall windfarm impact (as above).
- No changes to footprint of windfarm including construction compounds.
- No change to use of lighting during windfarm construction.
- No material increase in impact significance in terms of mortality of bats due to collision or bat trauma – overall impact of Whole UWF Project is slight to moderate.

- 50m separation buffer from adjoining linear features such as forestry edges or hedgerows will be maintained for the larger turbines without increasing the amount of forestry felling or hedgerow removal.
- Leisler's bat typically fly at a higher height than pipistrelles but only made up 6% of recorded calls during passive surveys – significance of impact will not increase.
- No change in the use of lighting on turbines – red lights will be used at the top of turbine nacelles in the same manner as permitted turbines.
- Proposed larger turbines will not cause significant disturbance effects to the roost at Building 5 (Compound 2) due to the separation distances.
- Proposed larger turbines do not present any material increase in the significance of collision risk to recorded pipistrelle species beyond that already authorised.
- No significant cumulative impacts in terms of disturbance/ displacement due to the separation distances with other windfarms in the surrounding landscape.
- ***Birds*** – (hen harrier) no impact from proposed amendment and no change to overall windfarm impact (as above).
- No change to mitigation measures/ planning condition (i.e. no works during breeding season in close proximity to nest sites.
- No suitable roosting habitat at Upperchurch Windfarm site.
- Habitat loss for other bird species – No change to footprint of development and no additional land take.
- No impact or change in terms of disturbance/ displacement of nesting/ foraging hen harrier during and outside of breeding season.
- No change in terms of disturbance/ displacement of other birds.
- Low levels of buzzard activity on site and widespread alternative habitat.
- Due to temporary duration of works and as Kestrel were not found to be breeding at Upperchurch Windfarm, impact evaluated as not significant.

- Localised reduction in avian and small mammal prey for hen harrier as a result of identified impact sources – will not result in effects at prey item population level within study area.
- Disturbance/ displacement of all birds (Including hen harrier) from operating turbines – no change in impact significance.
- Collision risk for passerines – no material change to the separation distance of the lowest part of the turbine blade to the ground. Passerines not significantly affected by wind turbines.
- Collision risk for birds of prey – no change in impact significance. No material change to habitat suitability within the site and low flight activity. No turbines located within the 2km core foraging range from known nests for hen harrier and no recorded winter roosts within 2km.
- No likely effects in terms of hen harrier exposure to EMF – literature from EirGrid supports no precedent for this as a viable impact.
- No change in disturbance/ displacement impact during decommissioning.

9.6.9. It is evaluated in the EIAR that the proposed amendments to the turbines and met masts will not result in any changes to the cumulative impacts of the Whole UWF Project with other projects and activities and will not require any changes to the other elements of the Whole UWF Project. The proposed amendment relates to a change in the structures themselves rather than the foundations, groundworks or construction activities, and moreover there will be no change to the impact on biodiversity in relation to habitat or construction/ decommissioning disturbance or displacement.

Mitigation Measures

9.6.10. The range of construction and operational stage mitigation measures and the environmental protection measures and monitoring arrangement for the Whole UWF Project will be implemented for the larger turbines and met masts.

9.6.11. Additional mitigation measures for the proposed larger turbines and met mast amendment that pertain to biodiversity include the following:

- Reduction of rotational speed of turbine blades when idling to reduce collision risk for bats.
- Adoption of best practice guidance 'Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation' 2019.
- 50m buffer from blade tip to edge of forestry edges/ trees/ hedgerow/ important characters
- No change to mitigation measures/ planning condition, i.e. no works during breeding season in close proximity to nest sites for hen harrier.
- Upperchurch Windfarm Environmental Management Plan 2021 – updated EMP which includes the proposed larger turbines and met masts amendment and will be used to communicate environmental protection measures.

9.6.12. Chapter 14 of the EIAR sets out all the mitigation measures, monitoring arrangements and planning conditions for each element of the Whole UWF Project. The following measures for the Whole UWF Project to be carried out through Environmental Management Plans are of relevance to Biodiversity:

- Mitigation Measures for Upperchurch Windfarm WF-MM-01 to WF-MM-40, and Monitoring Arrangements WF-MA-02 to WF-MA-09, WFMA-12 to WF-MA-22;
- Project Design (mitigation) Measures for UWF Related Works RW-PD-07, and RW-PD-09 to RW-PD-43;
- Project Design (mitigation) Measures for UWF Grid Connection GC-PD-05 and GC-PD-16 to GC-PD-50;
- Project Design (mitigation) Measures for UWF Replacement Forestry RF-PD-02 to RF-PD-05.

Residual Impacts

9.6.13. There will be no change in terms of residual impacts on aquatic habitats or species, terrestrial habitats, amphibians, reptiles, invertebrates or mammals from the proposed larger turbines and met masts beyond that already authorised for Upperchurch Windfarm. Furthermore, the proposed larger turbines will not result in a material change in terms of collision risk to bat species. Collision risk for birds will also not change materially beyond the impact of the already authorised turbines.

There will be no material change to habitat loss impact to bird species or disturbance displacement impacts to birds.

9.6.14. It was concluded previously that the cumulative impacts associated with the Whole UWF Project on water quality, habitats and species will be minimised to a non-significant level with proper implementation of project design measures, best practice measures and implementation of environmental commitments under Environmental Management Plans. The proposed amendments do not materially increase the impact on Biodiversity of the Upperchurch Windfarm element of the Whole UWF Project and therefore the cumulative impacts do not change.

Conclusions on Biodiversity

9.6.15. Impacts on biodiversity arising from the proposed windfarm amendments, both individually and cumulatively with other elements of the Whole UWF Project, are examined in the biodiversity chapter of the EIAR. An Appropriate Assessment of the impact of the proposal, in combination with other plans and projects, is carried out in Section 10 of this report.

9.6.16. Surveys have shown that there has been negligible change in habitat and species composition at the permitted windfarm site or in downstream watercourses in the passage of time over a survey period of approximately 10 years up to 2020. Appendix 8 of the EIAR provides detail in relation to the bat surveys undertaken in 2020 and bird surveys undertaken in 2019 and 2020. These surveys are appropriate having regard to the biodiversity of the area and adequate in terms of their content, duration and coverage.

9.6.17. The proposed larger turbines and met masts amendment will not result in any increase in excavated footprint, forestry felling, habitat removal, modification, degradation, or fragmentation beyond that already permitted. The same turbine bases, hardstands, access roads and electrical substation (as amended) will be used and there will be no change to construction materials, haulage, and activity levels on site during the construction, operation or decommissioning phases of the windfarm. The proposal will therefore not result in any change in terms of impact on aquatic habitat and species, land habitats, amphibians and reptiles or invertebrates or mammals beyond that already permitted. Furthermore, there will be no changes in

terms of construction and operational stage displacement/ disturbance or habitat loss to bats.

9.6.18. Bat surveys carried out in 2020 recorded the presence of common pipistrelle and soprano pipistrelle bats making up 91% of all calls. During the operational phase, this species would normally fly at heights below the blades of the enlarged turbines and therefore there is no increased collision risk beyond that permitted. There will also be no increase in the significance of impact for Daubenton's/ Natterer's Brown long-eared bats due to the low activity of recorded calls. Leisler's bat made up 6% of recorded calls during surveys and this species is more likely to come into the sweep area of blades. However, the significance of impact is not considered to increase from the permitted development due to the relatively infrequent use of the site by this species, its abundance nationally and the availability of suitable habitat in the surrounding landscape. In addition, it is proposed to reduce the rotational speed of turbine blades when idling to mitigate against collision risk. Best practice guidance will also be adopted for the survey, assessment and mitigation of bats and turbines during all phases of the proposed development. I would therefore be satisfied that there will be no material change in collision risk to bats from the permitted development. The change in ground clearance is 1.6m and I agree that this is insignificant in terms of additional collision risk for low flying species.

9.6.19. With respect to construction and operational stage displacement/ disturbance or habitat loss to birds, it should be noted that substantial surveying of the site has taken place between 2010 and 2020 and therefore the proposed development benefits from available survey information that goes beyond what might normally be submitted with a first-time planning application. Usage of the site by hen harrier has remained consistently low. Buzzard, kestrel and golden plover were observed within the site; however, no nesting birds of prey were recorded within recent or historical surveys. Passerine species are typical for the habitats at the windfarm site. There will be no additional habitat loss or disturbance/ displacement to birds beyond that already permitted as the proposed turbines and met masts will not result in any increase in excavations, vegetation and habitat removal and tree felling.

9.6.20. There will be no change in impact significance in terms of collision risk for hen harrier, kestrel, buzzard and golden plover. Usage of the site for hen harrier continues to be sporadic and habitat suitability continues to be sub-optional. There

is low flight activity for kestrel and documented avoidance behaviour of wind turbines by this species and for buzzard, kestrel, hen harrier and golden plover. There will be no change in terms of collision risk for passerines as these species of bird generally fly at low heights.

9.6.21. The EIAR considers the effects of climate change on ecology. The proposed larger turbines will offset almost twice the polluting gases of the authorised turbines due to increased electricity generation potential. Global climate change from greenhouse gases results in loss and fragmentation effects on biodiversity.

9.6.22. It should be noted that the Board requested further information from the applicant and in response it was confirmed that the chosen turbine has a hub height of 93.5m, rotor diameter of 117m and overall height of 152m (Vestas V117). A turbine of these dimensions is described in the EIAR and was chosen to evaluate the effects on biodiversity.

9.6.23. Overall, I consider that the EIAR has adequately assessed the impact of the proposed development on biodiversity and the cumulative impacts of the Whole UWF Project, together with other projects and activities that were scoped in for the purposes of the EIAR. The EIAR provides information that expressly addresses the significant effects of the proposed development on all species identified and the environmental impact of the chosen option and main alternatives has been properly considered.

9.6.24. I am satisfied that with proper implementation of mitigation measures, together with implementation of environmental commitments under the Environmental Management Plans, impacts on water quality, habitats and species will be minimised to a non-significant level. I am also satisfied that the EIAR adequately considers the passage of time in terms of updating and reviewing the surveys and assessments carried out for Upperchurch Windfarm.

9.7. Land, Soil, Water, Air and Climate

9.7.1. This assessment deals separately with the above environmental factors as they appear in the EIAR. Chapter 4 addresses Land & Soils and Chapter 5 covers Water. Air (including noise and shadow flicker) and Climate are dealt with under Chapters 6 and 7 respectively. The Land & Soils chapter details land use and connectivity,

soils, subsoils, bedrock and geological heritage sites. The Water chapter assesses surface water, groundwater, private drinking water and flood risk. Air quality, electromagnetic fields (EMF), noise, vibration and shadow flicker are appraised in Chapter 6 and climate action via renewable energy production and greenhouse gas emissions are covered in Chapter 7.

9.7.2. The Upperchurch Windfarm and the consented grid connection are located in a rural area within the wider Slievefelim to Silvermines upland area. The dominant land uses are agriculture and forestry. A total of 16 of the permitted 22 turbines and both met masts are situated in agricultural grasslands and the remaining six are in forestry plantations.

9.7.3. Bedrock comprises Silurian metasediments and volcanic with greywacke, siltstone and grit in the locality of the windfarm. Soils and subsoils in the area comprise mainly of mineral soils over sandstone and shale tills with some blanket peat. Peat areas are now almost exclusively used for forestry with peat depths typically less than 1m. Ground slopes at turbine locations range from 3.2 to 11.3 degrees. There are no recorded landslides/ slippages in the area, there is an absence of significant peat coverage and there are stable sub-surface ground conditions.

9.7.4. The main site entrance, Compound 1, Turbine 1 and access road are located in the Owenbeg Moraines, which is a County Geological Site. The Geological Heritage Site is of very high importance. The soil, subsoil and bedrock at the majority of the study area has a low to medium geological importance.

9.7.5. Upperchurch Windfarm is mostly located within the River Suir surface water catchment and the Templemore A groundwater catchment, with a smaller section in the Slieve Phelim groundwater body. The grid connection and a small section of the windfarm to the south-west are within the River Shannon catchment. Water sampling was conducted at Upperchurch Windfarm in 2020 at the same six locations sampled in 2012. No significant pluvial or fluvial flooding would be expected due to the elevated and hilly topography of the area.

9.7.6. Air quality in the area is considered good and there are no major existing noise sources. The main sources of noise are from traffic. The adjacent 4 no. turbines at Milestone windfarm to the south-west will also contribute to noise in the area. The potential for shadow flicker was evaluated from the proposed larger turbines both

alone and cumulatively with Milestone Windfarm. The 2013 EIS modelled 93 houses for shadow flicker and the current EIAR models an additional 42 houses. This is based on the chosen turbine size, which includes a 117m rotor diameter.

9.7.7. In terms of climate, the electricity sector is recognised as a key element in driving down total greenhouse gas emissions into the future and wind energy produces 33.7% of Ireland's electricity (2018). It is a key measure of the Climate Action Plan, 2021 to increase renewable energy for the generation of electricity from 30% up to 80% to 2030.

9.7.8. The passage of time since the preparation of the 2013 EIS has resulted in a number of changes to be considered in terms of land, soil, water, air and climate. Land now forms part of the EIAR evaluation process, and it has been recorded that water quality from sampling results has improved slightly but not to a material extent. The Milestone Windfarm was evaluated in the 2013 EIS for five turbines and the 2021 cumulative modelling took a precautionary approach and included six turbines for noise and shadow flicker. A 2dB margin of uncertainty was also added to the wind turbine noise data in noise predictions and the 2021 assessment takes account of topography. The main changes in terms of climatic factors include the adoption of the EU Emissions Trading System in 2014, the EU Effort Sharing Regulation in 2018, the Paris Agreement in 2016, the Climate Action Plan, 2019, and the Climate Action and Low Carbon Development (Amendment) Act, 2021.

Characteristics of the Proposed Development

9.7.9. The proposal seeks to increase the height of the 22 no. permitted turbines from 126m to 152m with rotor diameter of 117m. The proposed height of the met masts on site will correspond to the hub height of the wind turbines (93.5m). Construction work and activities for the proposed larger turbines and met masts will be the same as those for the permitted turbines. The operation of the windfarm with enlarged turbines will be similar to the permitted situation in terms of land use and maintenance of road, hardstandings and drainage systems.

9.7.10. The proposal will result in the generation capacity for each turbine increasing from the permitted 2-3 MW to 4.2 MW. The generation of the addition electricity will off-set the requirement of electricity generation using fossil fuels.

9.7.11. The proposed turbines with a rotor diameter of 117m compares to the permitted rotor diameter of 900m. The assessment of shadow flicker is based on a 10 rotor diameter distance from the turbines and the sensitive receptors falling within this area. Turbine technology has advanced since 2013 and the proposed turbines will have serrated edges which will generate lower noise emissions.

Predicted Impact of the Proposed Development on **Land**

9.7.12. The predicted impacts on land use are summarised as follows:

- Loss or use and connectivity of landholdings – no additional land take and no changes to forestry felling or construction works areas.
- Proposed larger turbines and met mast can be constructed and operated using the same access roads, electrical substation and ancillary site works.
- Wind take at adjacent windfarm – continued compliance with Wind Energy Guidelines (2006) separation distances, as well as those within the 2019 Draft Revised Wind Energy Development Guidelines.
- No reduction in grass/ forestry growth rates due to changes in drainage regime.
- No changes in land usage or infrastructure provision (access roads)
- No changes in terms of decommissioning stage effects.

Predicted Impact of the Proposed Development on **Soils, Subsoils and Bedrock**

9.7.13. The predicted impacts on local soils, subsoils, bedrock and Geological Heritage Sites are summarised as follows:

- No change to excavated footprint, no requirement for larger foundations and no changes to borrow pits.
- No changes to groundworks or storage of soils.
- No changes to the use of machinery, cement-based compounds or use and storage of oils, fuels and chemicals.
- No changes to operational or decommissioning stage requirements or locations.
- Geological Heritage Site (Owenbeg Moraines) – only 1 no. turbine, construction compound and access road in Owenbeg Moraines and due to relatively shallow

nature of proposed windfarm work, no significant impacts are anticipated. Compaction and erosion effect will also be negligible.

9.7.14. The proposal windfarm amendment will not result in any changes to the cumulative impacts of the Whole Upperchurch Windfarm project pertaining to land and soils. The proposal relates to a change to the structures rather than foundations, groundworks or construction activities. The amendment will not require any changes to the other elements of the Upperchurch Windfarm project. There will be no change to the Whole Upperchurch Windfarm Project effect on Land & Soils; the effect will remain not significant.

Predicted Impact of the Proposed Development on **Water**

9.7.15. The predicted impacts on local surface water bodies, local groundwater bodies, local wells and springs, local water dependant habitats and designated sites are summarised as follows:

- No changes in the impact of Upperchurch Windfarm on water beyond that already authorised.
- Proposal relates to the dimensions of the turbines and met masts rather than to their foundations.
- No changes to construction works areas or activities or access roads. Distances to watercourses will remain the same.
- No changes to dewatering requirements or windfarm drainage system.
- No new or changes to permitted watercourse crossing structures, instream works or changes to culvert requirements.
- Overall construction, operational and decommissioning remain unchanged from the authorised windfarm with respect to water.

9.7.16. The UWF Grid Connection is the only element of the Whole UWF Project that has the potential to cause cumulative impacts with other projects. Due to the separation distances, there is no potential for cumulative impacts associated with the proposed amendment with respect to water. Furthermore, the proposal relates to a change to the structures and not to the location or extent of groundworks or construction

activities associated with the permitted windfarm. There will be no change to the Whole UWF Project effect on Water; the effect will remain not significant.

Predicted Impact of the Proposed Development on **Air**

9.7.17. The predicted impacts on air quality, noise, vibration, shadow flicker and EMF are summarised as follows:

- The proposed amendment will not result in any change in impact with respect to contamination of water supply, construction vehicle emissions and dust, construction traffic and EMF beyond that already permitted.
- No changes to excavations, earthworks, storage of soils, borrow pits, reinstatement, construction traffic, use of machinery, etc.
- Larger modern turbines have similar noise levels as the permitted turbines and proposed turbines can be controlled via noise operating modes to stay within permitted noise limits.
- Proposal will result in turbines with a greater swept area and a higher turbine tower with greater potential for shadow flicker.
- Proposed larger turbines will result in a change to electrical output but no notable difference to in EMF levels emitted from electrical equipment in the turbine, including turbine transformer. Rated capacity of windfarm cabling and grid connection will remain the same.
- Increase in electricity production from c.150 million kWh per annum to for the permitted turbines to c.270 million kWh per annum for the proposed turbines will reduce emission of air pollutants such as NO_x, SO_x and NMVOCs.
- No change to decommissioning stage, traffic or use of machinery or powering down of windfarms.

9.7.18. Cumulative noise modelling was carried out in 2021 for the proposed larger turbines (Vestas V117) and the Milestone Windfarm (6 turbines). It has been determined that the proposed turbines at Upperchurch Windfarm do not contribute to cumulative noise at noise sensitive locations. The permitted noise limits can therefore be achieved cumulatively with the Milestone Windfarm and there is no change to the significance of impact of the authorised windfarm.

9.7.19. Shadow flicker modelling was carried out in 2021 for the proposed larger turbines (Vestas V117) cumulatively with Milestone Windfarm. This model represents a theoretical worst-case scenario with no allowance for non-turning blades, parallel rotors to the sun, and screening by trees, buildings and topography. There is potential for shadow flicker from the proposed larger turbines to exceed permitted levels at houses within 10 x rotor diameter, i.e., 1170m of the proposed turbines without mitigation at some locations.

Predicted Impact of the Proposed Development on **Climate**

9.7.20. The predicted impacts on climate are summarised as follows:

- No increase in greenhouse gas emissions during construction from vehicles and machinery – no requirement for additional construction activity, works or traffic.
- Increase in renewable energy during operational phase – significant positive impact from larger turbines generating c. 270 million kWh of clean renewable energy per annum, offsetting 101,250 tonnes of CO_2e per annum.
- Increases in power output by 120 million kWh per annum represents an 80% increase and an almost doubling of greenhouse gas emissions offset of CO_2e per annum.
- Proposal will contribute further to the Climate Action Plan, 2019 of 8.2GW of installed capacity of onshore wind generation.
- Direct increased positive effect from consequential avoidance of emissions from fossil fuel generation, thereby contributing towards mitigating atmospheric warming and change to climate.

9.7.21. There are approximately 300 windfarms in the Republic of Ireland with a generating capacity of 4,235MW in 2020. The proposed larger turbines will contribute to the cumulative generating capacity of windfarms in the State. The change in effects on climate is the only significant impact that the proposed development will bring about.

Mitigation Measures

9.7.22. The range of construction and operational stage mitigation measures and the environmental protection measures and monitoring arrangement for the Whole UWF Project will be implemented for the larger turbines and met masts.

9.7.23. Additional mitigation measures for the proposed larger turbines and met mast amendment that pertain to land, soils, water, air and climate include the following:

- Developer commits to the installation of shadow flicker control modules as a mitigation measure to ensure shadow flicker does not exceed the permitted levels of 30 hours per year or 30 minutes per day at dwellings, either from the Upperchurch Windfarm alone, or cumulatively with Milestone Windfarm.
- Developer commits to set shadow flicker control modules to eliminate shadow flicker completely at the relevant turbines should a complaint regarding shadow flicker be received from a house within the study area.
- Proposed turbines will be fitted with noise reduction modules to comply with the noise condition of 43 dB(A) or 5dB above background, whichever is greater.
- Upperchurch Windfarm Environmental Management Plan 2021 – updated EMP includes the proposed larger turbines and met masts amendment and will be used to communicate environmental protection measures.

9.7.24. Chapter 14 of the EIAR sets out all the mitigation measures, monitoring arrangements and planning conditions for each element of the Whole UWF Project. The following measures for the Whole UWF Project to be carried out through Environmental Management Plans are of relevance to land, soils, water, air and climate:

- Mitigation Measures for Upperchurch Windfarm WF-MM-01 to WF-MM-21, WF-MM-39 to WF-MM-44, and WF-MA-11;
- Monitoring Arrangements WF-MA-06 to WF-MA-09 and WF-MA-12 to WF-MA-15;
- Project Design (mitigation) Measures for UWF Related Works RW-PD-01 and RW-PD-03, RW-PD-05 to RW-PD-07, and RW-PD-09 to RW-PD-25;
- Project Design (mitigation) Measures for UWF Grid Connection GC-PD-04, GC-PD-05, GC-PD-07, GC-PD-11 and GC-PD-16 to GC-PD-50.
- Project Design (mitigation) Measures for UWF Replacement Forestry RF-PD-02 to RF-PD-05.

<u>Residual Impacts</u>

9.7.25. Proposed larger turbines will result in a not significant residual impact following implementation of mitigation measures.

Conclusions on Land, Soil, Water, Air and Climate

9.7.26. Land and soils, water and air (air quality, construction emissions & traffic and operational EMF) are environmental factors that will not be changed by the proposed larger turbines and met masts. Land use and construction work and activities for the proposed development will be the same as those for the permitted turbines. No significant impacts on the Owenbeg Moraines County Geological Site are anticipated due to relatively shallow nature of proposed windfarm work. The Geological Survey of Ireland submitted that there are no envisaged impacts on the integrity of the County Geological Site by the proposed development.

9.7.27. There will be no changes to the footprint of the windfarm, and groundworks, foundations borrow pits, reinstatement, operation and decommissioning will remain the same as for the permitted turbines. With respect to water, there will also be no changes in terms of dewatering, watercourse crossings, culverting or the windfarm drainage system. Effects pertaining to air quality, i.e. vehicle emissions, dust, traffic, EMF and contamination of water supply will not increase beyond that already permitted for Upperchurch Windfarm.

9.7.28. The effects on these factors will remain not significant and there will be no changes to the Whole UWF Project effect on land and soils, water and air quality, construction and traffic emissions and EMF. The proposal will not require changes to the other elements of the Whole UWF Project.

9.7.29. There is potential for certain environmental factors to be changed by the proposed larger turbines and met masts, i.e., noise impacts, shadow flicker and climate action. Larger turbines could give rise to increased noise and shadow flicker for sensitive receptors in the surrounding area. It is proposed to install shadow flicker control modules to ensure that shadow flicker does not exceed 30 hours per year or 30 minutes per day at nearby dwellings, and if a complaint occurs, turbines can be shut down to eliminate shadow flicker during the times in question.

9.7.30. Turbine technology has advanced in recent years in terms of noise reduction. Blades now have serrated edges which generated lower aerodynamic noise. Noise modelling was carried out for the chosen turbine and was compared with permitted

noise limits. The proposed larger turbines will be fitted with noise reduction modules to comply with the noise condition of 43 dB(A) or 5dB above background, whichever is greater. The turbines, with noise reduction mode applied, and when assessed cumulatively with Milestone Windfarm, will not give rise to significant noise impacts, and will comply with the noise condition of the parent permission.

9.7.31. Condition 11 attached by the Board to the parent permission (PL22.243040) states that wind turbine noise arising from the proposed development, by itself or in combination with existing or permitted wind energy development in the vicinity, shall not be exceed the greater of (a) 5 dB(A) above background noise level, or (b) 43 dB(A) $L_{90,10\ min}$ when measured externally at dwellings at other sensitive locations.

9.7.32. The current noise condition applied by the Board to windfarm developments requires that a windfarm proposal, by itself or in combination with any other permitted wind energy development, shall not result in noise levels, when measured externally at nearby noise sensitive locations, which exceed:

(a) Between the hours 7am to 11pm:

(i) The greater of 5 dB(A) $L_{90,10min}$ above background noise levels, or 45 dB(A) $L_{90,10min}$

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

(b) 43 dB(A) $L_{90,10min}$ at all other times.

9.7.33. This condition is based on a 5 dB(A) above background rating as recommended in the Draft Revised Wind Energy Guidelines, 2019. As noted in the Draft Guidelines, the use of a band 35-40 dB(A) in the 2006 Wind Energy Guidelines lacked clarity and could potentially lead to significant increases in noise levels being set at low background noise level locations.

9.7.34. The Noise Assessment, 2021 for the proposed larger turbines models a wind speed of 7 m/s, which generates the maximum noise emissions. A margin of uncertainty of 2 dB(A) has been added to both the proposed turbines and the Milestone turbines. There are only two receptors where the predictive cumulative noise levels parameters set out in Condition 11 are exceeded. One location is within the Milestone Windfarm landholding and the other is at the Upperchurch Windfarm site

office. The site is an unoccupied farmhouse owned by one of the landowners involved in the Upperchurch Windfarm project.

9.7.35. The Noise Assessment does not break down predicted noise level parameters to the extent outlined in the Board's current noise condition. However, the windspeed of 7 m/s is considered to be the worst-case scenario and these results are also overly conservative. Noise reduced operational modes will be incorporated to restrict noise levels to within authorised limits. A condition can also be attached to the Board's decision requiring the developer to submit a noise compliance monitoring programme, including mitigation measures such as de-rating of particular turbines.

9.7.36. The only significant impact change arising from the proposed larger turbines will be the increased production of renewable electricity and an almost doubling of emission savings from the permitted turbines. There will be an increase in electricity production from 150 million kWh to 270 million kWh per annum, and an increased avoidance of CO_2 emissions from 56,250 tonnes of CO_2e per annum to 101,250 tonnes of CO_2e per annum.

9.7.37. Observers Maher, O'Malley, O'Keefe and O'Dwyer have submitted concerns regarding the potential noise, shadow flicker and health impacts of the proposed development. However, it has been adequately demonstrated that there will be no material increase in the negative impact of Upperchurch Windfarm on any environmental topic as a result of the larger turbines and masts. It would appear, also, that the dwellings in question are more than four times the tip height (608m) from the nearest turbine as recommended in the Draft Revised Wind Energy Development Guidelines, 2019.

9.7.38. Overall, I consider that the impacts on land, soil, water, air and climate would be avoided, managed and/ or mitigated by the design and additional mitigation measures that form part of the proposal for larger turbines at Upperchurch Windfarm. Taken with other elements of the Whole UWF project, and with other projects or activities, the cumulative effects the proposal are not likely to give rise to significant effects that might warrant a refusal of the proposed development.

9.8. Material Assets

9.8.1. Material assets are addressed within Chapter 11 of the EIAR. The sensitive aspects in this chapter are the public road network, the electricity system, radio and wireless telecommunication network links, overhead telephone lines, water and supply pipes and wastewater pipes.

9.8.2. All roads in the vicinity of the Upperchurch Windfarm site are lightly trafficked. The main access to the windfarm will be off the R503 and local roads in and around the windfarm site consist mainly of single lane carriageways bounded by earthen embankments/ hedgerow and open drains. There have been no recorded collisions on local roads and some minor collisions on the R503. Other nearby regional roads include the R497 approximately 550m to the west and the R488 approximately 4.4km to the north.

9.8.3. Waymarked walking/ cycling routes through the windfarm site include the Eamon A Chnoic Loop and the Ormond Way. Part of the Ormond Way cycle route continues along local roads through Knockmaroe and Foilnaman.

9.8.4. There are no electricity transmission system assets in the Upperchurch Area. Local residences and businesses are widely dispersed in the study area and are generally located at the end of water, electricity and telephone networks. A telecoms relay pole was granted as part of the UWF Related Works element of the Whole UWF Project under Reg. Ref: 18/600913 (ABP-303634-19). The purpose of this structure was to divert a telecoms link path around the permitted turbines. The potential of the proposed larger turbines to disrupt this link is examined in the EIAR.

9.8.5. With respect to passage of time, observations of traffic, road condition and the extent of built services were conducted during site visits and consultations for the EIAR in 2021. There have been no major changes in the condition of local roads since 2013. The M7 and M8 motorways located approximately 20km to the west and east have opened since 2013.

9.8.6. There have been no changes to local built services since 2013. Milestone Windfarm and commenced operation since 2013 and the main entrance is located off the R503 at Graniera. There is some potential that two permitted turbines at Milestone could be constructed at the same time as Upperchurch Windfarm.

Characteristics of the Proposed Development

9.8.7. The proposed development includes the enlargement of permitted wind turbines at Upperchurch Windfarm to increase the generation capacity of each turbine from 2-3MW to 4.2MW. The Whole UWF Project involves the connection of the windfarm to the national grid over a distance of 28.9km to a consented substation on the Killonan – Nenagh 110kV overhead line. The grid connection for the most part will continue under the R503 Regional Route from the substation on site that was recent amended under Reg. Ref: 20/1048, to the recently consented substation at Mountphilips (ABP-306204-19).

9.8.8. The UWF Grid Connection will be taken in charge by ESB Networks and along with the Mountphilips substation, will become part of the national electricity network. Upperchurch Windfarm is expected to be constructed over a period of 12 months and approximately 100 people will be engaged in construction works. Another activity associated with the Whole UWF Project is the re-sagging of overhead lines.

9.8.9. Other proposed works and activities relevant to material assets for the Whole UWF Project include widening of site entrances off the public road, construction traffic and traffic management, road opening works to facilitate laying of cabling and haul route works.

Predicted Impact of the Proposed Development

9.8.10. The predicted impacts on **material assets (built services)** are summarised as follows:

- No change to impact on end users of local built services (local residents and community) as a result of the proposed larger turbines and masts – no requirement for service outages (water or electricity supply) during construction.
- No changes to construction or operational activities or machinery which could potentially damage built services.
- No likely impact on communication services due to electromagnetic interference because there will be no material change to EMF at turbine locations or at windfarm substation.
- Telecommunication link path diversion – no increase in size or extent of impact as there will be no change to turbine locations and no new signal paths being

affected. Permitted telecom relay pole mitigation will work for proposed larger turbines also.

Predicted Impact of the Proposed Development

9.8.11. The predicted impacts on **material assets (electricity system networks)** are summarised as follows:

- No change to impacts on electricity system networks – proposed larger turbines and met masts will not directly or indirectly impact the electricity transmission system.
- Proposed larger turbines will not result in any changes to the UWF Grid Connection or its impact on the electricity system network beyond that evaluated for the UWF Grid Connection – increase production from higher generation capacity turbines can be accommodated and exported using the authorised equipment and cabling.
- Proposed larger turbines and mast can be delivered without any requirement for electricity pole removal/ relocations.

9.8.12. The predicted impacts on **material assets (roads)** are summarised as follows:

- No changes to the impacts on the public road network – proposal only relates to the turbine and met mast structures and there will be no requirement for additional road works, wider site entrances or additional traffic.
- No change to turbine component haulage, traffic management requirements or bridge works/ culvert repair/ replacement associated with the proposed amendment.

9.8.13. The proposed amendment to the turbines and met masts will not result in any changes to the cumulative impacts of the Whole UWF Project with other projects and activities on material assets (roads), as there will be no changes to construction traffic or haulage routes. The permitted telecoms relay pole at Upperchurch Windfarm will also mitigate interference (if any) associated with Milestone Windfarm.

Mitigation Measures

9.8.14. The range of construction and operational stage mitigation measures and the environmental protection measures and monitoring arrangement for the Whole UWF Project will be implemented for the larger turbines and met masts.

9.8.15. There are no additional mitigation measures for the proposed larger turbines and met mast amendment that are specific to material assets.

9.8.16. Chapter 14 of the EIAR sets out all the mitigation measures, monitoring arrangements and planning conditions for each element of the Whole UWF Project. The following measures for the Whole UWF Project to be carried out through Environmental Management Plans are of relevance to material assets:

- Mitigation Measures for Upperchurch Windfarm WF-MM-47 to WF-MM-51, and Monitoring Arrangement WF-MA-01. Also, the UWF Related Works Telecom Relay Pole is a mitigation measure for Upperchurch Windfarm;
- Project Design (mitigation) Measures for UWF Related Works RW-PD-01 to RW-PD-04;
- Project Design (mitigation) Measures for UWF Grid Connection GC-PD-04 to GC-PD-07 and GC-PD-09 to GC-PD-13.

9.8.17. An updated Environmental Management Plan, which includes the proposed larger turbines and met masts amendment will be used to communicate environmental protection measures.

Residual Impacts

9.8.18. No residual impacts.

Conclusions on Material Assets

9.8.19. Material assets for the purposes of the proposed development includes the public road network and built services (telecoms, electricity and water networks). There have been no major changes to local roads or built services since the preparation of the EIS in 2013 and the proposed larger turbines and met mast will not result in any change in the impact of Upperchurch Windfarm on the public network or built services. The impact of the Whole UWF Project with other projects and activities on material assets is assessed as having no potential for/ no likely cumulative impacts.

The proposed amendment will not therefore result in any changes to the cumulative impacts of the Whole UWF Project with other projects and activities.

9.8.20. Subject to the proper implementation of all other relevant mitigation and best practice measures, I would be satisfied that the proposed larger turbines and met lasts will not have any significant effect on material assets either individually or cumulatively with other elements of the Whole UWF Project, or any other projects or activities.

9.9. Cultural Heritage and the Landscape

9.9.1. Chapters 9 and 10 of the EIAR describe the general characteristics with respect to cultural heritage and the landscape in the study area. Cultural heritage comprises sites of archaeological, historical or architectural significance within the receiving environment. A total of 101 cultural heritage sites were identified within 4km of the permitted turbines. Two recorded monuments are within the windfarm site boundary, neither of which are in the construction works footprint, and there are a further five sites on the Record of Monuments and Places within 500m of construction works areas. Overall, the surrounding upland landscape has many known monuments dating from the Neolithic to post medieval periods, with the uplands being most intensively settled in the late Neolithic and populations dispersing to the lower slopes in later periods.

9.9.2. Landscape is the area perceived by people, both natural and cultural, and the current impact of land use, settlement and other human interventions. The landscape of Upperchurch Windfarm comprises a rural upland setting with moderate and steep sided valleys that are predominately in agricultural and forestry use. Pasture in the form of large geometric fields enclosed by broadleaf headgerow remains the dominant land cover, with conifer taking over on higher slopes and ridges.

9.9.3. The windfarm site is within an area of ‘medium sensitivity to change or development’ as identified in the Landscape Character Assessment for Co. Tipperary. There are designated scenic routes in proximity to the windfarm site along the R497 to the north-west and south-west, along sections of the R503 to the west, and along the R498 to the north-east. Way-marked trails in the vicinity include the Eamonn a Chnoic/ Knockalough/ Red Hugh Loop, Birchhill Loop and Kilcommon Pilgrim Route

walking routes, as well as the Ormond Way/Multeen Way, which form part of long-distance walking and cycle routes.

Characteristics of the Proposed Development

9.9.4. From a landscape and visual perspective, the main impacts will occur during the construction phase of the windfarm and grid connection elements of the Whole UWF Project. This includes the creation of compounds, use of machinery, clearing of vegetation and topsoil, stockpiling of materials, reinstatement, etc.

9.9.5. The main visual and landscape impact of the proposed development is the increase in the height of 22 no. wind turbines from 126.6m to 152m, together with an increase in height of 2 no. meteorological masts from 80m to 93m. The turbines will be constructed on hills ranging in elevation from 280m to 401m OD. The visual and landscape impacts of the permitted windfarm was assessed at the time of this application and the passage of time has been considered in the current EIAR. The now operational Milestone Windfarm was addressed cumulatively within the previous assessment and there has been no material changes in terms of landscape and visual amenity in the Upperchurch Windfarm area.

9.9.6. Works and activities relevant to cultural heritage and the landscape within the Whole UWF Project include groundworks and excavation, temporary and permanent storage of excavations, forestry felling and hedgerow removal, movement of machinery and personnel, afforestation and permanent alteration of landform and vegetation patterns. No construction works at the turbine locations will take place within the Zone of Notification of any known archaeological monument. Unrecorded underground sites may be exposed during the course of construction ground works.

9.9.7. Some changes to Scenic Route identification codes took place in 2016 as part of the consolidated Tipperary Landscape Character Assessment (LCA). A number of new scenic viewpoints were also designated in the 2016 LCA, including two along the M7 motorway. These views are all outside the zone of theoretical visibility. Changes have also taken place to wind energy policy, with the previous three levels being replaced with two levels, i.e., open for consideration and unsuitable. The Upperchurch Windfarm site is within an ‘area open for consideration for new wind energy development’ in the 2016 Strategy.

9.9.8. There have been no other material changes in the landscape since 2013 and no new cultural heritage sites have been identified in the windfarm site in this period. Only four of the permitted six turbines at Milestone Windfarm were installed; however, the cumulative evaluation takes account of all six permitted turbines.

Predicted Impact of the Proposed Development

9.9.9. The predicted impacts on **cultural heritage** are summarised as follows:

- Proposed larger turbines and met masts will not result in any change in the impact during construction or decommissioning works on cultural heritage sites beyond that already permitted – no change in footprint and proposed larger turbines will be constructed using the same turbine bases, hardstands, access roads, electrical substation and ancillary site works.
- No material change in visual impacts on cultural heritage during operational stage as a result of the proposed larger turbines and met masts – cultural heritage sites in the vicinity of the windfarm site are not particularly vulnerable to visual impacts. Proposed larger turbines do not appear over-scaled relative to the broad scale underlying landform and overall visual impact will not increase.
- Proposed larger turbines will not materially alter the visual impact on RMP site Wedge Tomb TN039-0016 at Knockcurraghbola Commons, or any other cultural heritage sites in the surrounding landscape, when compared to the permitted turbines.
- Proposed larger turbines are 20% taller than permitted turbines but the dimensional increase will not be reflected by a proportional increase in visual impact.
- Due to narrow profile and ancillary nature of the met masts, proposed increased height will not result in a material increase in visual impact on cultural heritage sites.

9.9.10. There are no cumulative impacts with the Whole UWF Project and other projects and activities on recorded or unrecorded sites. Other projects included for cumulative evaluation are Milestone Windfarm, Foilnaman Mast and Cummermore Communications Pole. It is evaluated that the proposed larger turbines will not appear incongruous next to the smaller Milestone Windfarm turbines.

Predicted Impact of the Proposed Development

9.9.11. The predicted impacts on **landscape** are summarised as follows:

- *Landscape character:* no change to footprint of the windfarm or to landcover change or vegetation removal – turbine foundations, masts, access tracks, substation compound or other ancillary works will remain as permitted.
- No increase to the physical effects of the Whole UWF Project to landform, landscape features or land use patterns as a result of the proposed larger turbines and met masts.
- Principle of 22 no. commercial scale wind turbines is already established.
- 20% increase in scale is more difficult to discern than the dimensional differences suggest and does not necessarily result in a higher degree of impact.
- Landform and land use patterns within broad upland setting are capable of assimilating the proposed larger turbine dimensions as readily as the permitted turbines.
- Proposed amendments not considered to result in a noticeably increased effect on physical landscape elements or the overall character of the landscape in comparison to permitted turbines.
- *Visual amenity:* Comparative assessment table in EIAR shows that there are no instances in which the proposed larger turbines will result in an increase in significance of visual impact previously assessed for the permitted development.
- Casual observer unlikely to read the difference in height between the proposed larger turbines and the existing Milestone turbines – could easily be perceived as a function of higher ground level of relative viewing distance.
- Dimensional increase will not be reflected by a proportional increase in visual impact.
- From some viewpoints, the visual presence, aesthetic impact and relationship with the adjacent Milestone development are marginally altered by the proposed height increase – such effects are very nuanced and have little bearing on visual amenity overall.

- Comparative Zone of Theoretical Visibility Mapping indicates a very marginal increase in turbine visibility (4% additional land area). These areas generally occur in the outer reaches of the study area.
- Photomontages used to illustrate changes to visual presence, visual amenity and visual impact significance – all views evaluated as being of unchanged magnitude and significance. Permitted turbines have a low to high and mostly medium magnitude of visual impact and a minor or moderate significance of visual impact.

9.9.12. The proposed amendment will not result in any changes to the cumulative impacts of the Whole UWF Project with other projects and activities during the construction or decommissioning stages. The proposal relates to the structures rather than foundations, groundworks or construction activities and no changes to other elements of the Whole UWF Project will be required. The impact will remain as not significant to slight.

9.9.13. During the operational phase, the cumulative impacts of the proposed larger turbines and met masts will not arise from any increased intensity or dissemination of wind turbines as the number and location of turbines remains the same. The potential for discernible cumulative impacts from the scale of the proposed turbines relative of other permitted and existing turbines in the area is not considered to generate an increase in visual impact. It is also considered that there will not be an increase in cumulative effects with other elements of the Whole UWF Project. There is little contextual association between the proposed larger turbines and met masts and the nature and scale of other elements, i.e., UWF Related Works, UWF forestry replanting, etc.

9.9.14. Overall, there will be no additional cumulative impacts with other projects and activities and windfarms in the area, as there will be no material change to the landscape impacts arising from the amendment beyond the impact of the permitted turbines and met masts.

Mitigation Measures

9.9.15. The range of construction and operational stage mitigation measures and the environmental protection measures and monitoring arrangement for the Whole UWF Project will be implemented for the larger turbines and met masts.

9.9.16. There are no additional mitigation measures for the proposed larger turbines and met mast amendment that are specific to cultural heritage and the landscape.

9.9.17. Chapter 14 of the EIAR sets out all the mitigation measures, monitoring arrangements and planning conditions for each element of the Whole UWF Project. The following measures for the Whole UWF Project to be carried out through Environmental Management Plans are of relevance to cultural heritage and the landscape:

- Mitigation Measures for Upperchurch Windfarm WF-MM-45 to WF-MM-46, WF-MM-52 to WF-MM-53, and Monitoring Arrangement WF-MA-10;
- Project Design (mitigation) Measures for UWF Related Works RW-PD-02, RW-PD-03 and RW-PD-08;
- Project Design (mitigation) Measures for UWF Grid Connection GC-PD-05, GC-PD-07, GC-PD-011, GC-PD-14 and GC-PD-15.
- Project Design (mitigation) Measure for UWF Replacement Forestry RF-PD-02.

9.9.18. An updated Environmental Management Plan, which includes the proposed larger turbines and met masts amendment will be used to communicate environmental protection measures.

Residual Impacts

9.9.19. No residual impacts.

Conclusions on Cultural Heritage and the Landscape

9.9.20. Cultural heritage and the landscape are environmental factors with the potential to be changed by the proposed larger turbines and met masts. The windfarm site is located within an 'area open for consideration for new wind energy development' as illustrated in the Renewable Energy Strategy, 2016. The Landscape Character Assessment for the County places the site within an area of 'medium sensitivity to change or development.' There are also a number of designated scenic routes along regional roads in the vicinity of the windfarm site.

9.9.21. There are two recorded monuments within the windfarm site boundary and a total of 101 cultural heritage sites within 4km of the windfarm site. Two probable booleys, two small c-shaped enclosures and a rectangular enclosure were identified within the

windfarm site boundary. No heritage features occur within the construction works footprint; however, unrecorded underground sites may be exposed during construction works. Any impacts on underground archaeology will not increase as a result of the proposed larger turbines and met masts due to the fact that there will be no change to groundworks, excavations or turbine locations.

9.9.22. The only potential for impacts to cultural heritage features relates to the visual impact from the increased size of the turbines and met masts. However, I would be in agreement that the proposed larger structures will not materially increase the significance of visual impact on cultural heritage sites above the visual impact of the permitted structures. Photomontages illustrate that the proposed larger turbines will not appear over-scaled relative to the broad scale underlying upland landscape. Similarly, the proposed larger structures will not result in any material change in the impact of the permitted windfarm on landscape and visual amenity. Photomontages show that when viewed cumulatively with the Milestone Windfarm turbines, the difference in height can be attributed to the effect of the undulating landscape or distances from turbines. The turbines should nonetheless be viewed in photomontages in the context of smaller features such as trees and farm animals, as well as the broader landscape. The photomontages give a good representation of the visual impact of the proposed enlarged turbines and there is a satisfactory coverage from prominent locations and sensitive routes and viewpoints.

9.9.23. Observers O'Malley, O'Keefe and O'Dwyer are concerned with the potential for the cumulative visual impact of the proposed larger turbines to impact on the natural landscape and the view from dwellings. However, as noted above, there will be no material increase in the negative impact of Upperchurch Windfarm on any environmental factor as a result of the larger turbines and masts. It should also be noted that the observers' dwellings are sufficiently distant from the proposed turbines, and it has been illustrated that there will be no significant increase in visual impact.

9.9.24. Overall, I would be in agreement that the proposed increases to turbine and met mast dimensions will not result in any material change on landscape and cultural heritage that was previously assessed for this development. The passage of time has not resulted in significant changes to cultural heritage and the landscape and mitigation measures for the Whole UWF Project and the original grant of permission

are applicable and adequate for the proposed development. Subject to the proper implementation of all other relevant mitigation and best practice measures, I would be satisfied that the proposed larger turbines and met masts will not have any significant effect on cultural heritage and the landscape, either individually or cumulatively with other elements of the Whole UWF Project, or any other projects or activities.

9.10. Vulnerably of the Project to Major Accident and/ or Natural Disaster

9.10.1. Section 1.11 of the EIAR identifies any major accidents or natural disasters that have the potential to affect Upperchurch Windfarm, the proposed larger turbines and met masts and other elements of the Whole UWF Project. It is confirmed that the proposed project does not pose a major hazardous accident risk. The nearest SEVESO facilities at Grassland Argo in Limerick and MSD (pharmaceutical) in Kilsheelan, Clonmel are not in proximity to the windfarm site.

9.10.2. Land slippage and flooding are natural disasters that could potentially occur. However, there is an absence of peat or very shallow peat at works locations. A Stage II Flood Risk Assessment completed for the UWF Related Works element of the Whole UWF Project concluded that there is a low risk of flooding. There will be no change to the vulnerability of the permitted windfarm to major accidents arising from the proposed larger turbines and met masts. The windfarm will be constructed in the same footprint and there will be no additional excavations or hardstanding areas, or changes to watercourse crossings. The proposal will comprise of the same technology and fundamental design that is appropriately engineered to withstand weather extremes.

9.10.3. I am satisfied that given the nature of the proposed development, and the mitigation measures proposed under the Whole UWF Project, together with the low probability of a major accident/ natural disaster, it is not likely that significant effects on the environment would arise in this regard.

9.11. Cumulative Impacts & Environmental Interactions

9.11.1. Chapter 13 of the EIAR sets out the various interactions between the environmental factors insofar as the effect of one environmental factor causes an indirect effect on

another environmental factor. Throughout the EIAR, the cumulative assessment of the proposed larger turbines and met masts is carried out along with the other elements of the Whole UWF Project and other projects and activities.

9.11.2. The main potential cross factor effects from the Whole UWF Project to population and human health arise from effects to air, material assets and landscape. Increased ambient dust and noise during construction can impact on health, respiratory, cardiovascular, and mental health, and effects to material assets (roads) can increase the risk of road traffic accidents. Intensification of activity and visual clutter or complexity can impact of landscape and potentially tourism revenue. However, the impact pathways associated with the proposed larger turbines and met masts will not result in any new cross-factor effects to population and human health. Positive cross factor impacts will be created from the production of renewable electricity offsetting climate change effects.

9.11.3. Cumulative visual impacts to the landscape can have cross factor effects with soils and biodiversity through alteration of land cover and vegetation patterns. Cross factor effects to biodiversity can be caused by effects to soils, water and air through excavation, contamination and increased dust, noise and vibration. There is also the potential for cross factor effects to surface water caused by effects to soils.

9.11.4. The other main cross factor effects relate to climate/ land and soils (increases in greenhouse gas emission from embodied emissions) caused by effect to soils; cultural heritage (landscape and visual setting); and landscape/ biodiversity (severance of hedgerows and removal of trees).

9.11.5. Many of the interactions for the Whole UWF Project will take place during the construction phase of the proposed development and will therefore be short term. Mitigation measures are set out in each of the relevant chapters and can also be applicable to other environmental factors. Impact pathways associated with the proposed larger turbines and met masts will not change or materially increase the potential cross-factor effects in a negative for any environmental factor. Positive operational cross-factor effects to biodiversity, air and human health will be experienced through increased production of renewable energy.

9.11.6. The cumulative effects of the proposed larger wind turbines and met masts are assessed together with the other elements of the Whole UWF Project and with other

relevant projects and activities. The other elements of the Whole UWF Project include the Upperchurch Windfarm (granted under PL22.243040); UWF Related Works (ABP-303634-19), UWF Grid Connection (ABP-306204-19); and UWF Replacement Forestry (afforestation licence approved). UWF Related Works predominately overlays the permitted Upperchurch Windfarm. The proposed amendments to the permitted turbines to provide larger turbines, together with the enlarged turbines will take place on the same footprint.

9.11.7. The EIAR evaluates the impact on the environment of optimising the permitted Upperchurch Windfarm by amending the turbine size. The cumulative effects of proposed larger turbines and met masts are assessed under each environmental factor. The impact of the proposed amendment on its own, on the authorised windfarm and as part of the Whole UWF Project in evaluated. The effects of passage of time are considered and presented in the cumulative baseline information for each sensitive aspect. The Upperchurch Windfarm EIS 2013; UWF Replacement Forestry EIAR 2018; UWF Related Works Revised EIAR 2019; and UWF Grid Connection EIAR 2019 were reviewed in the context of baseline conditions to determine whether there have been any relevant or material changes to the baseline environment.

9.11.8. An area of 15km around the footprint of the Whole UWF Project was scoped for other large projects and relevant activities with potential to cause cumulative effects. Larger windfarms were included but windfarms that were too small and too far away were excluded.

9.11.9. The applicant has considered the impact of the proposed larger turbines and met masts cumulatively with all other aspects of the Whole UWF Project and other relevant projects and activities. The windfarm was originally assessed and permitted by the Board, and I do not consider that the applicant should be required to carry out a full EIAR for this element of the Whole UWF Project from first principles or to reassess the permitted development in its own right. Competent experts have reviewed the 2013 assessment and subsequent assessments, and this information has been updated and incorporated into the current EIAR. I am therefore satisfied that sufficient information has been acquired to fully inform the cumulative assessment of the proposed larger turbines and met masts, the Whole UWF Project and any other relevant projects and activities.

9.11.10. Overall, I would be satisfied with the methodology provided within the EIAR for cumulative assessment, which provides for a robust and complete assessment of the proposal by itself and any cumulative interactions with other aspects of the proposal.

9.12. Reasoned Conclusion

9.12.1. Having regard to the examination of environmental information contained above, and in particular to the EIAR and supplementary information provided by the applicant, and the submissions from the Planning Authority, observers and prescribed bodies in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

- Positive impacts on **population and human health** through positive changes on local health and the local economy from increased landowner and community benefit payments and commercial rates payments. There will also be associated benefits in terms of improved physical, mental and social health and wellbeing, direct benefits to local projects, programmes and infrastructure and strengthening of the economy.

  When the proposed development is assessed in the context of the extant permission on site, there will be a neutral change in terms of turbine noise, shadow flicker, health and tourism and amenity.

  Construction phase impacts on Population and Human Health for the Whole UWF Project will be mitigated through a range of Project Design Environmental Measures and Best Practice Measures. Additional mitigation measures are proposed for shadow flicker occurrence.

- Potential adverse impacts on **Biodiversity** during the operational phase on certain bird and bat species from increased risk of collision with rotating blades. The significance of impact on bats is not considered to increase from the permitted development due to the relatively infrequent use of the site by the bat species most at risk (Leisler bat), its abundance nationally and the availability of suitable habitat in the surrounding landscape.

  There will be no change in impact significance in terms of collision risk for hen harrier, kestrel, buzzard and golden plover. Usage of the site for hen harrier

continues to be sporadic and habitat suitability continues to be sub-optional. There is low flight activity for kestrel and documented avoidance behaviour of wind turbines by this species and for buzzard, kestrel, hen harrier and golden plover. There will be no change in terms of collision risk for passerines as these species of bird generally fly at low heights. It is proposed to reduce the rotational speed of turbine blades when idling to mitigate against any collision risk.

There will be no changes in terms of construction and operational stage displacement/ disturbance or habitat loss to bats and birds beyond that already authorised for Upperchurch Windfarm due to construction or operational activity, habitat loss, habitat usage or availability of prey.

- Potential impacts on **Air** from the proposed larger turbines and met masts, i.e., noise impacts, shadow flicker and climate action.

  The proposed larger turbines would not increase the noise levels of the windfarm beyond that already permitted due to serrated edges on blades which will generate lower noise emissions. The proposed larger turbines will be controlled to ensure that operational noise levels at the nearest dwellings will remain within acceptable levels.

  Additional mitigation measures for shadow flicker control modules proposed to ensure that shadow flicker remains within acceptable levels. Turbines can be shut down to eliminate shadow flicker if a complaint arises.

- Positive significant impacts on **Climate** from the larger turbines due to the production renewable wind energy and a reduction in the use of fossil fuels.

- Potential impacts on **Landscape character and visual amenity** from the proposed 20% increase in the scale of the permitted turbines. Proposed larger turbines will not appear over-scaled relative to the underlying landform and the principle of 22 no. wind turbines on site has already been established. Dimensional difference does not necessarily result in a proportional increase in visual impact or noticeably increased effect on the overall character of the landscape compared to the permitted turbines.

9.12.2. Having regard to the above, I am satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative effects on the environment.

The Board is satisfied that the reasoned conclusion is up to date at the time of making the decision.

10.0 Appropriate Assessment

10.1. The areas addressed in this section are as follows:

- Compliance with Articles 6(3) of the EU Habitats Directive
- Geographical Scope and Main Characteristics
- Screening the need for Appropriate Assessment
- The Natura Impact Statement and associated documents
- Appropriate Assessment of implications of the proposed development on each European Site

10.2. **Compliance with Articles 6(3) of the EU Habitats Directive:** The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site.

10.2.1. The proposed development comprising amendments to the 22-turbine windfarm development granted under Reg. Ref: 13/510003 (PL22.243040) providing for an increase in size of permitted turbines and amendment of height and design or 2 no. permitted meteorological masts at the permitted Upperchurch Windfarm to the west of Upperchurch, Co. Tipperary is not directly connected with or necessary to the management of any European site and is therefore subject to the provisions of Article 6(3).

10.3. **Geographical Scope and Main Characteristics**

10.3.1. The consented 22-turbine Upperchurch Windfarm is located around five hills with similar heights ranging between 364m and 411m OD located in the eastern foothills of the Slieve Felim and Silvermines mountains. There are a number of local roads and watercourses located between hills and the main land uses in the area are hill

farming and forestry. There are also sporadic dwellings and farm buildings. The nearest built-up areas are at Upperchurch and Kilcommon villages, which are approximately 2km to east and west of the site respectively.

10.3.2. The application boundary is approximately 150m east of the Slievefelim and Slivermines Mountains SPA. To the south-west, the site boundary is approximately 300m from the SPA. The Lower River Shannon SAC is approximately 3km west at the Bilboa River and 3.2km to the south-west at Cummer Bridge over the Inch (Bilboa) River. The Lower River Suir SAC is approximately 2.9km east of the site and the Anglesey Road SAC is approximately 2.8km south.

10.3.3. The Owenbeg River is to the south-east of the site and the Clodiagh River is to the north. There are also a number of watercourses within the immediate vicinity of the site. The site lies on the boundary of the Shannon and Suir river basins. The majority of the site is within the Clodiagh River Catchment (Suir) and a smaller amount to the south is within the Multeen River Catchment (Suir). Small sections to the west are within the Mulkear River Catchment (Shannon). In terms of local surface water bodies, the Bilboa River catchment is to the west, the Clodiagh River (Local) is to the north, the Owenbeg is east and the Turraheen River is to the south.

10.3.4. The main characteristics of the proposed development related to the proposed turbines and meteorological masts. No changes are proposed to the foundations of these structures that differ from the permitted turbine and mast foundations. There will be no changes to the locations of the authorised turbines or met masts. Furthermore, the authorised site access and roads, haul routes, crane hard standings, foundations and drainage systems will remain the same. There will also be no additional excavations, forestry felling, hedgerow removal, emissions, wastes or construction activity. The proposed amendment will be constructed and operated in accordance with the 2013 Sediment & Erosion Control Plan and Ecological Management Plan. However, the 2013 Preliminary Environmental Management Plan will be updated to include the amendments.

10.4. Screening the need for Appropriate Assessment

10.4.1. The first test of Article 6(3) is to establish if the proposed development could result in likely significant effects to a European site. This is considered stage 1 of the

appropriate assessment process i.e., *screening.* The screening stage is intended to be a preliminary examination. If the possibility of significant effects cannot be excluded on the basis of objective information, without extensive investigation or the application of mitigation, a plan or project should be considered to have a likely significant effect and Appropriate Assessment carried out.

10.4.2. Having regard to the information and submissions available, the nature, size and location of the proposed development and its likely direct, indirect and cumulative effects, the source pathway receptor principle and sensitivities of the ecological receptors, the European Sites set out in Table 1 below are considered relevant to include for the purposes of initial screening for the requirement for Stage 2 appropriate assessment on the basis of likely significant effects. A 15km study area from all elements of the Whole UWF Project is applied for this purpose, wherein a total of 23 European Sites are included (19 SACs & 4 SPAs).

10.4.3. European sites considered for Stage 1 screening:

European site (SAC/SPA)	Site code	Distance to Upperchurch WIndfarm	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Slievefelim to Silvermines Mountains SPA	004165	0 km	Numerous connections	Y
Lower River Shannon SAC	002165	1.5 km	Numerous connections	Y
Lower River Suir SAC	002137	3 km	Numerous connections	Y
Clare Glen SAC	000930	17 km	Potential pathways	Y
Anglesey Road SAC	002125	2.9 km	No pathway	N
Bolingbrook Hill SAC	002124	7.2 km	No pathway	N
Keeper Hill SAC	001197	10.9 km	No pathway	N
Silvermines Mountain SAC	000939	11.5 km	No pathway	N
Silvermines Mountain West SAC	002258	12.5 km	No pathway	N
Philipstown Marsh SAC	001847	13 km	No pathway	N
Kilduff, Devilsbit Mountain SAC	000934	13.7 km	No pathway	N
Glenstal Wood SAC	001432	17.1 km	No pathway	N

European site (SAC/SPA)	Site code	Distance to Upperchurch WIndfarm	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Slieve Bernagh Bog SAC	002312	28.4 km	No pathway	N
Lough Derg, North-east Shore SAC	002241	28.5 km	No pathway	N
Glenomra Wood SAC	001013	31.4 km	No pathway	N
Tory Hill SAC	000439	40.4 km	No pathway	N
Ratty River Cave SAC	002316	44.5 km	No pathway	N
Askeaton Fen Complex SAC	002279	48.2 km	No pathway	N
Barrigone SAC	000432	62 km	No pathway	N
Curraghchase Woods SAC	000174	50.6 km	No pathway	N
Lough Derg (Shannon) SPA	004058	24.5 km	No pathway	N
River Shannon and River Fergus Estuaries SPA	004077	34.5 km	No pathway	N
Stack's to Mullaghareirk Mountains, West Limerick Hills & Mount Eagle SPA	004161	67.3 km	No pathway	N

Table 1 – Summary Table of European Sites considered in Screening for Appropriate Assessment

10.4.4. Based on my examination of the NIS and other supporting information, the NPWS website, aerial and satellite imagery, the scale of the proposed development and likely effects, separation distances and functional relationships between the proposed works and the European sites, their conservation objectives, and taken in conjunction with my assessment of the subject site and the surrounding area, I conclude that a Stage 2 Appropriate Assessment is required for the following European Sites in view of the conservation objectives of those sites:

- Slieve Felim to Silvermines Mountains SPA (Site code: 004165)
- Lower River Shannon SAC (Site code:002165)

- Lower River Suir SAC (Site code: 002137)
- Clare Glen SAC (Site code: 000930)

10.4.5. Table 2 below provides a screening summary matrix where there is a possibility of significant effects from the Whole UWF Project, or where the possibility of significant effects cannot be excluded without further detailed assessment.

Site name **Qualifying Interest feature**	**Is there a possibility of significant effects in view of the conservation objectives of the site?** **General impact categories presented**		
	Habitat loss/ modification	Water quality and water dependent habitats (pollution)	Disturbance/ displacement barrier effects
Slieve Felim to Silvermines Mountains SPA Special Conservation Interest: Hen Harrier	Yes Potential for indirect effects to Hen Harrier within the SPA (i.e. secondary effects on suitable habitat via habitat loss, degradation, fragmentation or reduction/loss of connectivity, or through a reduction in prey item species). Potential for indirect effects to Hen Harrier ex-situ the SPA (i.e. Secondary effects on suitable habitat via habitat loss, degradation, fragmentation or loss/reduction in connectivity, reductions in prey item species, or through disturbance or mortality effects to Special Conservation Interest bird species outside their respective SPA).	No	Yes Potential for direct effects to Hen Harrier within and ex-situ the SPA (i.e. disturbance, mortality).
Lower River Shannon SAC Qualifying Interests:	Yes Direct effects in terms of habitat loss, fragmentation, degradation,	Yes Indirect effects via reductions in water quality or spread of invasive species within SAC	Yes Potential for direct effects (i.e. mortality) within or ex situ the SAC on Atlantic Salmon [1106], Sea Lamprey [1095], Brook Lamprey

Sandbanks which are slightly covered by sea water all the time [1110] Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170] Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] 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] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	loss/ reduction of connectivity within SAC	Indirect effects to qualifying interest habitat of a SAC site via reductions in water quality or spread of invasive species ex situ the SAC	[1096], River Lamprey [1099] and Otter [1355]. Potential indirect effects on the above species within SAC from disturbance/ displacement and habitat loss/ fragmentation, degradation, loss/ reduction of connectivity. Potential indirect effects on the above species ex-situ the SAC from disturbance/ displacement and habitat loss/ fragmentation, degradation, loss/ reduction of connectivity.

Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Salmo salar (Salmon) [1106] Tursiops truncatus (Common Bottlenose Dolphin) [1349] Lutra lutra (Otter) [1355]			
Lower River Suir SAC Qualifying Interests: 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] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	Yes Potential habitat loss affecting species [1029], [1092], [1106], [1095], [1096], [1099] and [1355].	Yes Indirect effects to qualifying interest habitat, [3260], [91E0], [6430], [91J0] and [91A0] (i.e. via reductions in water quality or spread of invasive species) within or ex-situ the SAC.	Yes Potential indirect effects on Freshwater Pearl Mussel [1029] within and ex-situ the SAC from disturbance/ displacement and habitat loss/ fragmentation, degradation, loss/ reduction of connectivity. Potential direct effects on White Clawed Crayfish [1092] within or ex-situ the SAC from mortality and potential indirect effects on this species within and ex-situ the SAC from disturbance/ displacement and habitat loss/ fragmentation, degradation, loss/ reduction of connectivity. Potential direct effects on Atlantic Salmon [1106], Sea Lamprey

Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Taxus baccata woods of the British Isles [91J0] 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]			[1095], Brook Lamprey [1096], River Lamprey [1099] (i.e. mortality) within or ex-situ the SAC. Potential direct effects on Atlantic Salmon [1106], Sea Lamprey [1095], Brook Lamprey [1096], River Lamprey [1099] within or ex-situ the SAC from from disturbance/ displacement and habitat loss/ fragmentation, degradation, loss/ reduction of connectivity. Potential direct effects Otter [1355] (i.e. mortality) ex-situ the SAC only. Potential direct effects on Otter [1355] within or ex-situ the SAC from disturbance/ displacement and habitat loss/ fragmentation, degradation, loss/ reduction of connectivity.
Clare Glen SAC Qualifying Interests: Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Trichomanes speciosum (Killarney Fern) [1421]	No	Yes Potential indirect effects to qualifying interest habitat [91A0] and [1421] (i.e. via reductions in water quality or spread of invasive species) within or ex-situ the SAC.	No

Table 2 Screening summary matrix: European Sites for which there is a possibility of significant effects (or where the possibility of significant effects cannot be excluded without further detailed assessment)

10.4.6. The remaining sites can be screened out from further assessment because of the scale of the proposed works, the nature of the Conservation Objectives, Qualifying and Special Conservation Interests, the separation distances and the lack of a substantive ecological linkage between the proposed works and the European sites.

10.4.7. There is no potential for the proposed larger turbines and met masts amendment to cause direct habitat loss, fragmentation or disturbance in any of the Special Areas of Conservation screened out within the study area due to the location of the works outside of any such European Sites. Indirect terrestrial or aquatic habitat loss or degradation will not occur in all sites screened out due to the absence of hydrological connectivity and the separation distance between construction works, or any operational stage work, and these sites. There is also no potential for indirect/ ex-situ disturbance or displacement of animal species as the qualifying interests in certain SACs relate to habitats/ plant species only.

10.4.8. With respect to the SPAs in the study area, there will be no direct habitat loss, habitat degradation or disturbance effect on any site including the Slievefelim to Silvermines Mountains SPA. The windfarm site boundary is outside the Slieve Felim to Silvermines Mountains SPA and at a significant distance from all other SPAs. Indirect terrestrial or aquatic loss, reduction or degradation or disturbance effects to the Special Conservation Interests of Lough Derg (Shannon) SPA, the River Shannon and River Fergus Estuaries SPA and the Stacks to Mullaghareirk Mountain or the West Limerick Hills & Mount Eagle SPA will not occur due to separation distances, the absence of hydrological connectivity or the large downstream distance and dilution factors.

10.4.9. It is therefore reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on Anglesey Road SAC (002125), Bolingbrook Hill SAC (002124), Keeper Hill SAC (001197), Silvermines Mountains SAC (000939), Silvermines Mountains West SAC (002258), Philipstown Marsh SAC (001847), Kilduff, Devilsbit Mountain SAC (000934),Glenstal Wood SAC (001432), Slieve Bernagh Bog SAC (002312), Lough Derg, North-east Shore SAC (002241), Glenomra Wood SAC (001013), Tory Hill SAC (000439), Ratty River Cave SAC (002316), Askeaton Fen Complex SAC (002279), Barrigone SAC (000432),

Curraghchase Woods SAC (000174), Lough Derg (Shannon) SPA (004058), River Shannon and River Fergus Estuaries SPA (004077) and Stacks to Mullaghareirk Mountains, West Limerick Hills & Mount Eagle SPA (004161) in view of the sites' conservation objectives and a Stage 2 Appropriate Assessment for these sites is not therefore required. A Finding of No Significant Effects Report for these sites is appended to the NIS accompanying the planning application. I am therefore satisfied that no additional sites other than those assessed in the NIS (Lower River SAC, Lower River Suir SAC, Clare Glen SAC and Slieve Felim and Silvermines Mountains SPA) need to be brought forward for Appropriate Assessment.

10.5. The Natura Impact Statement and Associated Documents

10.5.1. The application was accompanied by an Appropriate Assessment Report, 2021 for the "Proposed Larger Turbines and Met Masts at the Authorised Upperchurch Windfarm, Co Tipperary" comprising a Stage 1: Screening for Appropriate Assessment and a Stage 2: Natura Impact Statement dated April 2021 and submitted to the Board on 7th May 2021. The NIS examines the effects of the proposed larger turbines and met masts alone and as part of the Whole UWF Project, and in-combination with other projects and activities, on the integrity of the four European Sites in respect of their conservation objectives and their structure and function.

10.5.2. The following documents are appended to the Appropriate Assessment Reporting:

- Appendix A1: Finding of No Significant Effects (FONSE) Report
- Appendix A2: Scoping of Other Projects and Activities
- Appendix A3: Hen Harrier Survey Data, Upperchurch Windfarm 2019-2020

10.5.3. It should be noted that the Stage 2: Appropriate Assessment should be entitled an NIS as required under the Planning and Development Act, 2000 (as amended). However, the document in question is a NIS in all but name. In general, I am satisfied that the Appropriate Assessment Reporting (Including NIS) submitted with the planning application adequately describes the proposed development, the project site and the surrounding area. The Stage 1 Screening Assessment concluded that a Stage 2 Appropriate Assessment (NIS) was required. The NIS outlined the

methodology used for assessing potential impacts on the habitats and species within the European Sites that have the potential to be affected by the proposed development. It predicted the potential impacts for the site and its conservation objectives, suggested mitigation measures, assessed in-combination effects with other plans and projects and identified any residual effects on the European site and its conservation objectives.

10.5.4. The Appropriate Assessment Reporting (Screening and NIS) were informed by the following studies, surveys and consultations:

- Review of conservation objectives, site synopsis and site boundary information for European Sites considered possibly within the Zone of Influence of the development;
- Information on ranges of mobile QI populations from 'Status of EU Protected Habitats and Species in Ireland' (NPWS, 2019);
- Information on range of mobile SCI bird populations from Bird Atlas 2007-2011 from Balmer et al., 2013 and Hardley et al. (2013) for birds of prey;
- Details of QIs/SCIs from National Biodiversity Data Centre and National Biodiversity Action Plan, 2017-2021;
- Review of site via Environmental Sensitivity Mapping tool and EPA online mapping data and GSI online database;
- Surveys of semi-natural habitat (O'Neill et al., 2013), saltmarsh (Devaney & Perrin, 2015; McCorry & Ryle, 2009), and woodland (Perrin et al., 2008);
- GIS boundary catchments for freshwater pearl mussel from NPWS;
- Review of location and layout mapping and description for Whole UWF Project, including construction and methodologies;
- Supporting ecological receptor information in Biodiversity Chapter 8 of the EIAR (2021);
- Environmental protection measures for the Whole UWF Project along with a review of Best Practice Survey Methods used to inform the Biodiversity evaluation (Stage 2);

- Review of planning documentation and environmental reports Appropriate Assessment for other elements of the Whole UWF Project;
- Site visits and field surveys;
- Review of planning documentation and environmental reports for other plans and projects;
- Consultations with statutory consultees and other relevant bodies in 2020 and consultations previously conducted for the Whole UWF Project.

10.5.5. The NIS concluded that, subject to implementation of mitigation measures for the protection of designated QIs and SCIs, water quality and against the spread of invasive species, that there is no likelihood of significant effects as a result of the proposed larger turbines and met masts, alone or as part of the Whole UWF Project, or in combination with other projects and activities. It is concluded that proposed larger turbines and met masts amendment to the already permitted Upperchurch Windfarm will not give rise to adverse effects on the integrity of any European Sites under consideration.

10.5.6. Having reviewed the NIS and the supporting documentation, I am satisfied that it provides adequate information in respect of the baseline conditions, clearly identifies the potential impacts, and uses best scientific information and knowledge. Details of mitigation measures are provided, and they are summarised in the NIS. I am satisfied that the information is sufficient to allow for appropriate assessment of the proposed development (see further analysis below).

10.6. Appropriate Assessment of implications of the proposed development on each European Site

10.6.1. The following is an assessment of the implications of the project on the relevant conservation objectives of the European sites using the best available scientific knowledge in the field. All aspects of the project which could result in significant effects are identified and mitigation measures designed to avoid or reduce any adverse effects are examined and assessed.

10.6.2. I have relied on the following guidance:

- DoEHLG (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, National Parks and Wildlife Service.
- EC (2002) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EC
- EC (2011) Guidance Document: Wind Energy Development and Natura 2000
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC

10.6.3. **Relevant European sites:** The following sites are subject to appropriate assessment.

- Slieve Felim to Silvermines Mountains SPA (Site code: 004165)
- Lower River Shannon SAC (Site code:002165)
- Lower River Suir SAC (Site code: 002137)
- Clare Glen SAC (Site code: 000930)

10.6.4. A description of these sites and their Conservation Objectives and Qualifying Interests, including any relevant attributes and targets for these sites, are set out in the NIS and outlined in Tables 3-6 below. I have also examined the Natura 2000 data forms as relevant and the Conservation Objectives supporting documents for these sites available through the NPWS website (www.npws.ie).

10.6.5. **Aspects of the proposed development:** The main aspects of the proposed development, in combination with the Whole UWF Project, that could adversely affect the conservation objectives of European sites include:

- Permanent or temporary reduction or loss of suitable foraging habitat for Hen Harrier.
- Disturbance/ displacement of foraging Hen Harrier during the breeding season and outside of the breeding season.
- Collision risk with operating turbines.

- Disturbance, displacement, injury and death of mobile aquatic species that are Qualifying Interests of the Lower River Shannon SAC and Lower River Suir SAC due to construction activities, habitat modification/ fragmentation and barrier effects and ongoing disturbance throughout the operational phase.
- Decrease in habitat quality via: surface water runoff, sediment entrainment or release; release of fuels/ oils/ chemicals, surface/ ground water quality impacting on the qualifying interests of the Lower River Shannon SAC, Lower River Suir SAC and Clare Glen SAC.
- Spread of aquatic invasive species.

10.6.6. **Tables 3-6** summarise the appropriate assessment and site integrity test. The conservation objectives, targets and attributes as relevant to the identified potential significant effects are examined and assessed in relation to the aspects of the proposal (alone and in combination with the Whole UWF and other plans and projects). Mitigation measures are examined, and clear, precise and definitive conclusions reached in terms of adverse effects on the integrity of European sites.

10.6.7. Supplemental to the summary tables, key issues that arose through consultation and through my examination and assessment of the NIS and further information request are expanded upon in the text below.

Table 3

Slieve Felim to Silvermines SPA (Site code: 004165)

Key Issues:

- Permanent or temporary reduction or loss of suitable foraging habitat
- Reduction in prey item species
- Disturbance/ displacement of foraging Hen Harrier during breeding season
- Disturbance/ displacement of foraging Hen Harrier outside breeding season
- Collision risk with operating turbines

Conservation Objectives: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004165.pdf

		Summary of Appropriate Assessment			
Conservation Objective	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?
To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Hen Harrier (A082)	The favourable conservation status of a species is achieved when: - population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and - the natural range of the species is neither being	*Permanent or temporary reduction or loss of suitable foraging habitat.* - Amendment only relates to turbine and met mast structures and there will be no changes to the footprint of the windfarm (including vegetation clearance, earthworks, forestry felling or hedgerow removal) associated	- Carrying out of construction work and hedgerow removal outside of the breeding season. - No works within SPA during breeding season. - Hen Harrier breeding surveys to record all pre-nuptial activity, nesting activity and active nests within 2km of construction works	Assessed with Whole UWF Project (permitted Upperchurch Windfarm, UWF Grid Connection, UWF Replacement Forestry and UWF Other Activities, as well as consented Milestone, Castlewaller and Bunkimalta Windfarms, forestry/	Yes - amendments will not require any changes to footprint of windfarm. - No effects to hen harrier via reductions in habitat, range, population status or viability. - Prey item species flight heights generally well below blade. - No nests occur within 4km of windfarm and foraging

	reduced nor is likely to be reduced for the foreseeable future, and - there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.	with the authorised windfarm. - No effects Hen Harrier via reductions in habitat, range, population status or viability through permanent or temporary loss of foraging habitat. *Reduction of prey item species* - While larger turbines represent a potential increase in collision risk impact on passerine species due to increased wind-sweep area of the blades, flight heights are generally well below the lowest point of the rotating blade. Proposed amendments will not result in any landcover change and will not therefore impact on prey item species via habitat loss. *Disturbance/ displacement of foraging Hen Harrier during the breeding season.* - Larger turbines represent a potential increase in disturbance magnitude – considering infrequent hen harrier	boundary prior to commencement, during and 3 years after construction. - Construction works within 1km of Hen Harrier roost limited to one hour after sunrise and one hour before sunset (Oct. to Feb.). - No UWF Grid Connection works will be carried out within 2km of an active Hen Harrier nest - distance to nearest confirmed nest locations is 4.8km & 4.5km respectively for UWF Related Works and 3.15km for the closest point of the UWF Grid Connection	agriculture and turf cutting. - Both positive and negative quality effects occur with regards to Hen Harrier foraging habitat loss across Whole UWF Project – no negative effects occur within SPA. - No reliance on lands at either Mountphilips or windfarm site for foraging. - Potential for reduction in prey will occur across Whole UWF Project as a result of habitat loss and disturbance/ displacement. General passerines such as Meadow Pipit will not be significantly affected due to the abundance of suitable habitat. - Due to separation distances between sources of operational impact on prey item species (collision with operating turbines) at Upperchurch Windfarm and at Castlewaller/	usage in the vicinity is evaluated as low. - Randomness and low number of Hen Harrier observations suggest that windfarm is used infrequently. - Negative effects of Upperchurch Windfarm are evaluated in the context of being effectively mitigated by the activities consented under the Upperchurch Hen Harrier Scheme resulting in net gain to Hen Harrier in area and quality of habitat. - Provision and management of UWF Replacement Forestry outside but adjacent to the SPA also contributes to net overall gain to Hen Harrier (30 Ha of actively managed foraging habitat). Forestry is a generally negative trend in the background environment and this is off-set by gain of 30 ha. - Change to collision risk evaluated as negligible.

		activity in the vicinity of the turbines, there is not expected to be any material change to disturbance/ displacement to hen harrier as a result of the larger turbines. - Results of survey programme between 2015 & 2020 show that usage by hen harrier of Upperchurch Windfarm site has remained consistent with usage levels recorded for the authorized development between 2010 & 2012, i.e., low levels of activity. - Baseline environment in terms of sub-optimal availability of suitable foraging habitat has remained stable. - No turbines will be located within the core foraging range of 2km from known nest sites. - Proposed larger turbines and met masts will not result in any material change to the impact of the authorized windfarm on the SPA. *Disturbance/ displacement of foraging*		Bunkimalta windfarms, and considering the low levels of harrier activity within Upperchurch Windfarm site, and the separation distance to the nearest nests, cumulative magnitude is evaluated as negligible. - Magnitude of cumulative impact in terms of disturbance during and outside breeding season will be negligible due to separation distances between Whole UWF Project and other projects and low levels of hen harrier activity. - No works for windfarm or the grid connection will occur during breeding season. - Multiple sources of noise and visual intrusion will occur in, and both sides of the upland area during the same period of time.	

		Hen Harrier outside the breeding season. - As above - No recorded winter roosts within 2km of Upperchurch Windfarm. *Collision risk with operating turbines* - Given the typically low flight heights of hen harrier and documented avoidance behaviour in relation to wind turbines, collision risk is considered to be low. - Larger turbines represent a potential increase in collision risk – Infrequent hen harrier activity, separation distance from known nest sites, and sub-optimal habitat at windfarm site mean that impact magnitude is negligible. - Occurrence of courtship flights unlikely given distance from nests.		- Cumulative impact outside breeding season relates to potential for concurrent activity encountered sequentially by foraging birds as they move through areas where works are taking place. - No potential cumulative impact with UWF Grid Connection because route is entirely on paved roads. - Collision risk with operating turbines within Whole UWF Project including proposed amendment evaluated as negligible due to low levels of hen harrier activity within site, flight behaviour of this species and documented avoidance behaviour of wind turbines.	
Overall Conclusion: Integrity test					

Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the Slievefelim to Silvermines Mountains SPA in view of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.

Table 4

Lower River Shannon SAC (Site code: 002165)

Key Issues:

- Decrease in instream aquatic habitat quality
- Changes in flow regime
- Riparian habitat degradation
- Spread of aquatic invasive species
- Direct mortality of fish and aquatic species
- Disturbance or displacement of fish and aquatic species
- Direct mortality of Otter
- Disturbance/ displacement of Otter

Conservation Objectives: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

		Summary of Appropriate Assessment			
Conservation Objective	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?

To maintain the favourable conservation condition of the following:					
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate hydrological and tidal regime; maintain appropriate sub-stratum, water quality, typical species, floodplain connectivity and marginal fringing.	*Decrease of instream habitat quality:* - No sources of impact associated with proposed larger turbines and met mast amendment. - No changes to construction works or activities for authorised windfarm. *Changes in flow regime* - No sources of impact associated with proposed larger turbines and met masts amendment. *Riparian habitat degradation within or ex-situ SAC* - No sources of impact associated with proposed larger turbines and met masts amendment. *Spread of invasive aquatic species.* - No sources of impact associated with proposed larger turbines and met masts amendment.	- Measure to ensure mitigation implementation. - General measures for water quality protection included on a precautionary basis due to the presence of works within the Lower Shannon SAC greater catchment area. - Measures specific to Lower River Shannon SAC – included for locations that overlap or are in close proximity to the SAC. - Specific management plans which include measures designed, or which will in part avoid/ reduce the likelihood of adverse effects on European Sites (Surface Water Management Plan/ Invasive Species Management Plan). - Environmental emergency response procedures included in	- Upperchurch Windfarm and proposed amendments do not occur within Shannon catchment. - Potential for cumulative effects with other windfarms and grid connections but evaluated as low due to large size and cumulative capacity of catchments, etc. - Instream works throughout Whole UWF Project affecting flow regime are required at a limited number of locations, which require temporary works and permanent instream structures. - Potential for introduction of non-native invasive aquatic species at 64 watercourse crossing locations spread over SAC regional catchment - other projects are	Yes - Due to absence of impact sources, proposed development will not change the in-combination effect of Whole UWF Project with other projects and activities beyond that already evaluated. - Magnitude of impact in terms of decrease in instream aquatic habitat quality is low taking into account impact evaluations for Whole UWF Project. - Overall magnitude evaluated as negligible in respect of Whole UWF Project given limited locations where there is a change to aquatic flow regime, in addition to localised nature of impacts and wide dispersal area. - Impact magnitude of Whole UWF Project on riparian and bankside habitat within SAC evaluated as negligible.
Lampetra planeri (Brook Lamprey) [1096]	Access to all watercourses down to 1st order streams; at least 3 age/ size groups present, juvenile density at least 2/m^2; no decline in extent and distribution of spawning beds; more than 50% of sample sites positive.				
Lampetra fluviatilis (River Lamprey) [1099]	Access to all watercourses down to 1st order streams; at least 3 age/ size groups present,				

	juvenile density at least 2/m2; no decline in extent and distribution of spawning beds; more than 50% of sample sites positive.	*Direct mortality on QI fisheries and other species* - No sources of impact associated with proposed larger turbines and met masts amendment. *Disturbance/ displacement of QI fisheries and other species within or ex-situ the SAC* - No sources of impact associated with proposed larger turbines and met masts amendment. *Direct mortality and disturbance/ displacement of Otter* - No sources of impact associated with proposed larger turbines and met masts amendment.	the UWF Grid Connection Environmental Management Plan. - Best practice measures including measures which in part avoid/ reduce the likelihood of adverse effects on European Sites. - Specific measures to avoid or reduce effects on SAC species. - Specific measures to avoid or reduce effects on Otter	obliged to meet statutory requirements with regards to introduction or spread of invasive species. - 6 locations limited to grid connection have potential to be affect fisheries through mortality. - Direct disturbance or displacement of aquatic ecological receptors limited to footprint of any instream works or culvert replacement – evaluated as negligible. - Potential to cause mortality of otter at larger watercourse crossings and/ or through traffic and machinery movements. - 3 no. crossing points along grid connection has signs of otter use and nearest is 3km from windfarm site – no likelihood of cumulative effects.	- Implementation of the Invasive Species Management Plan and best practice biosecurity measures will ensure that there is no likelihood of spread of invasive aquatic species occurring. - Magnitude of effects from Whole UWF Project is negligible due to limited footprint of instream works and mitigation measures for protection of fish. - Negligible impact with other projects as it is expected there will adherence to setback buffers and implementation of consented mitigation. - Magnitude of impact for Whole UWF Project is essentially in the order of UWF Grid Connection given limited geographical overlap and records of otter from other project elements within the SAC catchment. - Magnitude of cumulative impact with other projects on otter evaluated as negligible – otter will be habituated to existing traffic. - Upland nature of windfarm sites, absence of otter evidence, limited zone of effect, separation distance upstream and limited
To restore the favourable conservation condition of the following:					
Petromyzon marinus (Sea Lamprey) [1095]	Greater than 75% of main stem length of rivers accessible from estuary; at least 3 age/ size groups present; juvenile density at least 1/m^2; no decline in extent and distribution of spawning beds, more than 50% of sample sites positive				
Salmo salar (Salmon) [1106]	100% of river channels down to 2nd order accessible from estuary, conservation limit for each system consistently exceeded, maintain or exceed 0+ fry				

	mean catchment-wide abundance threshold value- currently set at 17 salmon fry/5 minutes sampling, no significant decline in out-migrating smolt abundance, no decline in no. & distribution of spawning redds due to anthropogenic causes, water quality at least Q4 at all sampled sites.				exposure to pathways likely to result in disturbance/ displacement given degree of habituation to background activities.
Lutra lutra (Otter) [1355]	No significant decline in distribution or extent of terrestrial, marine and freshwater habitat; no significant decline in couching sites and holts; available fish biomass; no significant increase in barriers to connectivity.				
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	Stable/ increasing habitat area and woodland size; no decline in habitat distribution; diverse woodland structure, extent of community types and natural regeneration; maintain appropriate				

	hydrological regime; criterial relating to dead wood, veteran trees and local distinctiveness; and a variety of vegetation composition and absence/ control of negative indicator species.				
Overall Conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the Lower River Shannon SAC in view of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.					

Table 5

Lower River Suir SAC (Site code: 002165)

Key Issues:

- Decrease in instream aquatic habitat quality
- Changes in flow regime
- Riparian habitat degradation
- Spread of aquatic invasive species
- Direct mortality of fish and aquatic species
- Direct mortality of Otter
- Disturbance/ displacement of otter

Conservation Objectives: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002137.pdf

		Summary of Appropriate Assessment			
Conservation Objective To maintain the favourable conservation condition of the following:	**Targets & Attributes (as relevant)**	**Potential adverse effects**	**Mitigation Measures**	**In-combination effects**	**Can adverse effects on site integrity be excluded?**

Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate hydrological and tidal regime; maintain appropriate sub-stratum, water quality, typical species, floodplain connectivity and marginal fringing.	*Decreases in instream habitat quality within or ex-situ the SAC* - No source of impact associated with proposed larger turbines and met masts as amendment only relates to turbine and met mast structures and there will be no changes to construction works or activities for the authorised windfarm. *Changes in flow regime* - Absence of impact sources associated with proposed amendment as there are no changes to footprints or construction (including movement of soils and machinery, excavation works. *Riparian habitat degradation* - No sources of impact associated with proposed development *Spread of invasive aquatic species* - No sources of impact associated with proposed development *Direct mortality of QI species* - No sources of impact associated with proposed development	- Measures to ensure mitigation implementation. - General measures for water quality protection. - Specific management plans which include measures designed to or which will in part avoid/ reduce the likelihood of adverse effects on European Sites (Surface Water Management Plan, Invasive Species Management Plan, CEMP, Sediment & Erosion Storm Water Control Plan, Fuel & Oil Management Plan). - Environmental emergency response procedures included in the Environmental Management Plan. - Best practice measures including measures which in part avoid/ reduce the likelihood of adverse effects on European Sites. - Monitoring measures - Specific measures to avoid or reduce effects on SAC species.	- Proposed larger turbines & met masts will not change the in-combination effects of all elements of the Whole UWF Project beyond that already evaluated in the most recent. - Elements of the Whole UWF Project which are located within the Suir catchment and which have any potential to result in effects on aquatic habitat are UWF Related Works, the magnitude of which has been evaluated as negligible – only 5 no. watercourse crossing required and these will be subject to project design measures to avoid adverse effects on European Site integrity. - Given nature of watercourses present, the proposed works and implementation of project design measures, there is no likelihood for indirect effects leading to sediment deposition at a scale to alter channel morphology or flow regime.	Yes - No overall impact sources from proposed larger turbines and met masts. - Overall magnitude of cumulative impact is negligible taking account of impact evaluations for the Whole UWF Project and other activities in the wider study area.
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate hydrological regime; positive indicator of vegetation composition regarding non-native species, etc., vegetation structure and physical structure attributes.				
Austropotamobius pallipes (White-clawed Crayfish) [1092]	No reduction from baseline distribution, juveniles and/ or females with eggs in all occupied tributaries, no alien crayfish and no instances of disease, sampling of water quality by EPA, no reduction in habitat				

	heterogeneity or habitat quality.	*Disturbance or displacement of QI species* - No sources of impact associated with proposed development *Otter Mortality and displacement* - No sources of impact associated with proposed development	- Specific measures to avoid or reduce effects on Otter	- Cumulative impact magnitude of Whole UWF Project on riparian and bankside habitats within Suir regional catchments evaluated as negligible. - Impact magnitude for spread of aquatic invasive species evaluated as medium due to the presence of invasive species in the Whole UWF area - Potential for direct mortality of aquatic ecological receptors limited to footprint of any instream works in Whole UWF area (5 no. locations) – evaluated as negligible. - Temporary displacement will be limited to affected stretch of watercourse, without cumulative population level impacts as watercourse or catchment level. - Impact magnitude on otter from Whole UWF Project is negligible and in the order of the UWH Related Works element. Absence of otter records from watercourses forming upper reaches	
Lutra lutra (Otter) [1355]	No significant decline in distribution or extent of terrestrial, marine and freshwater habitat; no significant decline in couching sites and holts; available fish biomass; no significant increase in barriers to connectivity.				
To restore the favourable conservation condition of the following:					
Old sessile oak woods with Ilex and Blechnum in the British Isles	Stable/ increasing habitat area and woodland size; no decline in habitat distribution; diverse woodland structure, extent of community types and natural regeneration; maintain appropriate hydrological regime; criterial relating to dead wood, veteran trees and local distinctiveness; and a variety of				

	vegetation composition and absence/ control of negative indicator species.			of River Suir outside SAC.	
Taxus baccata woods of the British Isles [91J0]	Stable/ increasing habitat area and woodland size; no decline in habitat distribution; diverse woodland structure, extent of community types and natural regeneration; dead wood, veteran trees and local distinctiveness; and a variety of vegetation composition and absence/ control of negative indicator species.				
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	Stable/ increasing habitat area and woodland size; no decline in habitat distribution; diverse woodland structure, extent of community types and natural regeneration; maintain appropriate hydrological regime; criterial relating to dead wood, veteran trees and local distinctiveness; and				

	a variety of vegetation composition and absence/ control of negative indicator species.				
Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]	Restore distribution to 10.4km and population to at least 10,000 adult mussels; restore 20% of population to ≤65mm in length and at least 5% to ≤30mm in length; ≤5% decline from previous no. of adults counted; dead shells <1% of adult population and scattered in distribution; restore suitable habitat in more than 8.8km in the Clodiagh system and any additional stretches necessary for salmonid spawning; restore condition of habitat and water and substratum quality; maintain appropriate hydrological regime; maintain sufficient juvenile salmonids to host glochidial				

	larvae; restore area and condition of fringing habitat necessary to support the population.				
- Petromyzon marinus (Sea Lamprey) [1095] - Lampetra planeri (Brook Lamprey) [1096] - Lampetra fluviatilis (River Lamprey) [1099]	Greater than 75% of main stem length of rivers accessible from estuary (Sea Lamprey), access to all watercourses down to 1st order streams (Brook and River Lamprey) at least 3 age/ size groups present, juvenile density at least 1/m^2 (Sea Lamprey) and 2/m^2 (Brook and River Lamprey), no decline in extent and distribution of spawning beds, more than 50% of sample sites positive				
Salmo salar (Salmon) [1106]	100% of river channels down to 2nd order accessible from estuary, conservation limit for each system consistently exceeded, maintain or exceed 0+ fry mean catchment-wide abundance threshold value-				

	currently set at 17 salmon fry/5 minutes sampling, no significant decline in out-migrating smolt abundance, no decline in no. & distribution of spawning redds due to anthropogenic causes, water quality at least Q4 at all sampled sites.				

Overall Conclusion: Integrity test

Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the Lower River Suir SAC in view of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.

Table 6

Clare Glen SAC (Site code: 000930)

Key Issues:

- Decrease in instream aquatic habitat quality
- Changes in flow regime
- Riparian habitat degradation

• Spread of aquatic invasive speciess Conservation Objectives: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000930.pdf					
		Summary of Appropriate Assessment			
Conservation Objective To maintain the favourable conservation condition of the following:	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?
Killarney Fern *Trichomames speciosum* [1421]	No loss of geographical spread of populations; no decline in no. of populations and colonies; maintain population life cycle stage and no decline in population size; young/ unfurling and fertile fronds present; no loss of suitable habitat; maintenance of hydrological conditions; appropriate light shading levels; no loss of woodland canopy; and maintain absence of non-invasive species.	*Decreases in in-stream aquatic habitat quality, within or ex-situ the SAC* - No sources of impact associated with the larger turbines and met masts amendment due to absence of connectivity. *Changes to flow regime within or ex-situ SAC* - No sources of impact associated with the larger turbines and met masts amendment due to absence of connectivity. *Riparian habitat degradation within or ex-situ the SAC* - No sources of impact associated with the larger	- Measures to ensure mitigation implementation. - General measures for water quality protection - Specific management plans which include measures designed, or which will in part avoid/ reduce the likelihood of adverse effects on European Sites (Surface Water Management Plan/ Invasive Species Management Plan). - Environmental emergency response procedures included in the UWF Grid Connection	- Sequential or cumulative effects may occur depending on how many watercourse crossings are being worked on simultaneously. - Other projects are in separate sub catchments. - cumulative effects evaluated as negligible. - Whole UWF Project and other project effects are in the order of the UWF Grid Connection. - No potential for cumulative effects on flow regime, riparian habitat degradation or	Yes - At bridge on Clare River, works will be limited to road surface with cable installed in the structure, road level increased and parapets raised. - only between 100-300m of trench excavated in any day with maximum of 3 watercourses crossed. - dilution factor of main channel of Clare River will avoid any alteration to hydrology. - Duration of any reductions in quality of downstream habitat with regards to QI are temporary, short-term and reversible.

To restore the favourable conservation condition of the following:		turbines and met masts amendment due to absence of connectivity. *Spread of invasive aquatic species* - No sources of impact associated with the larger turbines and met masts amendment due to absence of connectivity.	Environmental Management Plan. - Best practice measures including measures which in part avoid/ reduce the likelihood of adverse effects on European Sites. - Monitoring measures - Cable trenching works, joint bay installation and culvert replacement will only take place during dry weather.	spread of invasive aquatic species with other elements of Whole UWF Project – none within or upstream of SAC. - Potential for cumulative effects on flow regime and riparian habitat degradation with certain other projects located is negligible.	- Flow regime changes avoided by carrying out works in drier months, isolation of flow and equilibrated restoration, over-pumping water, use of deflector plates and sensitive restoration of beds and banks. - Riparian habitat impacts will be reversible with reinstatement and short-term until vegetation has re-established. - Bespoke Invasive Species Management Plan including best practice biosecurity measures.
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]	Stable/ increasing habitat area and woodland size; no decline in habitat distribution; diverse woodland structure, extent of community types and natural regeneration; dead wood, veteran trees and local distinctiveness; and a variety of vegetation composition and absence/ control of negative indicator species.				
Overall Conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the Clare Glen SAC in view of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.					

Relevant European site: Slieve Felim to Silvermines Mountains SPA (Site code: 004165)

10.6.9. The conservation objective for the Slieve Felim to Silvermines Mountains SPA is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Hen Harrier.

10.6.10. According to the Site Synopsis, the Slieve Felim to Silvermines Mountains SPA is an extensive upland site located in Counties Tipperary and Limerick, much of which is over 200m above sea level, with the highest peak at Keeper Hill (694m). Roughly half of the site is afforested with coniferous forests in first and second rotation plantations (pre-thicket and post-thicket), and substantial areas of clear fell. Approximately one quarter of the site comprises unplanted blanket bog and heath, with the remainder consisting of mostly of rough grassland used for hill farming. There is also some deciduous woodland occurring in river valleys.

10.6.11. It is noted that the site is one of the strongholds in the country for Hen Harrier, which is listed on Annex I of the EU Birds Directive. Numbers recorded in 2005 represented 3.7% of the all-Ireland total and the mix of forestry and open areas provide optimum habitat conditions for this bird species. The Site Synopsis states that the early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather or unplanted bogs and heath. It is also stated that open bog and moorland, young conifer plantations, openings and gaps within forests and hill farmland are used for foraging, at distances of up to c. 5km from the nest. Prey consists mostly of small birds and mammals. Peregrine and Merlin have also been recorded on the site and Red Grouse is found in unplanted bog and heath.

Parent permission

10.6.12. Planning permission for 25 years from commissioning was originally granted for the proposed Upperchurch Windfarm comprising 22 no. wind turbines in August 2014 (Reg. Ref: 13/510003/ PL22.243040). Condition 18 of this permission requires the full implementation of the Ecological Management Plan submitted with the planning application, including the provision of enhanced foraging areas, additional hedgerow enclosures, and measures by landowners in relation to spreading, burning, interference with drainage, retention of hedgerow, restriction on use of poisons and

new forestry plantation. These measures will provide alternative foraging areas to replace potential/ possible foraging areas displaced as a result of the siting of turbines on site.

10.6.13. A total of 2.2ha of trees, 1.4km of riparian habitat and 2.8km of new hedgerow will be enhanced or created during initial activities over an area of 128 hectares of agricultural lands that will be managed for the benefit of Hen Harrier, thereby protecting foraging habitat in the vicinity of the Slievefelim to Silvermines SPA. Thus, there will be a net gain to Hen Harrier is 30 hectares, (128 ha – 98.11 ha).

10.6.14. Essentially, the loss of suitable habitat arising from the windfarm is off-set by the creation via a management plan of improved or new foraging habitat at a different, albeit nearby or adjoining location. It should be noted, however, that no loss of foraging habitat will occur within European Sites and the proposed works, together with mitigation measures implemented through the Hen Harrier Management Scheme and UWF Replacement Forestry, are all located entirely outside of the SPA. Furthermore, it was noted by the Inspector reporting on the parent case when carrying out the Appropriate Assessment in 2014 that *"…irrespective of whether these alterative foraging areas offered by way of mitigation, are or are not provided, I am satisfied that no adverse effects arise from the development in relation to the Natura Site and any qualifying interests or objectives."* It was also highlighted in the Inspector's Report that no nesting of the species occurs within the development site.

Current Proposal

10.6.15. The proposed development is for amendments to the permitted windfarm to include increase in the size of turbines from 126.6m to 152m, together with increase in the height of the permitted 80m high meteorological masts to correspond with the hub height of the larger turbines (93.5m). The proposed turbines will therefore have a rotor diameter of 117m. The generation capacity for each turbine will increase from the permitted 2-3MW to 4.2MW. The proposed amendment will not require changes to the footprint of the windfarm. There will be no additional vegetation clearance, earthworks, forestry felling or removal of hedgerow above that required to facilitate the permitted development.

Baseline ecological conditions of the Hen Harrier

10.6.16. The NIS presents hen harrier survey data for 2019 and 2020 at Upperchurch Windfarm. Additional vantage point surveys were undertaken during the 2019 and 2020 breeding season to include sightings and habitat over which the birds were observed. Similar surveys were carried out for general birds. The surveys also recorded details of timing, duration and weather conditions.

10.6.17. Overall, the survey programme for hen harrier covering Upperchurch Windfarm carried out between 2015 and 2020 has shown that usage of the site by hen harrier has remained consistently low. Furthermore, the sub-optimal baseline environment in terms of suitable habitat for hen harrier has remained stable. Where hen harrier activity did occur, this was typically intermittent, demonstrating that this species is not dependent on habitat within the windfarm site for foraging, hunting or commuting. The results of the above surveys are considered by the applicant to demonstrate that there is no dependency by birds breeding within the SPA upon the windfarm lands.

10.6.18. The nearest known historical nest location to the windfarm is located c. 2.5km south at Knockalough, with the last confirmed nesting attempt occurring in 2014. The last confirmed active nest (2018) is at Glenough, which is outside the SPA at a distance of 4.5km from the windfarm boundary and 4km from the 2013 study area boundary. The closest recently active nest within the SPA to the UWF Related Works is 4.8km to the west of the nearest point of the construction works boundary.

10.6.19. Habitat within 2km of the windfarm comprises mostly of managed grasslands that is generally of limited use for breeding Hen Harrier, whereas habitat within the SPA offers greater suitability for foraging Hen Harrier. It has also been found that distance to nest is a limiting factor for foraging and a study undertaken by UCC discovered that the concentration of hunting behaviour was more than 10 times higher within 1km of the nest than it was between 2 and 5km from the nest. The applicant therefore submits that there is no indication of significant use of the western side of the proposed windfarm by Hen Harrier. It is also submitted that the passage of time has not resulted in any new dependency by Hen Harrier for nesting or foraging on the baseline environment from 2013.

Factors that can adversely affect the achievement of conservation objectives

10.6.20. The nearest wind turbines will be approximately 500m from the boundary of the SPA. As noted above, the proposed amendments to the turbines and met masts will take place in the same location of the consented windfarm. The proposed larger turbines and met masts amendment only relates to the structures themselves and will not result in any changes to construction/ operational activity, the footprint of the permitted windfarm, areas to be cleared, use of machinery, noise levels, human disturbance, and visual intrusion.

10.6.21. The proposed larger turbines represent a potential increase in disturbance magnitude; however, the infrequent hen harrier activity in the vicinity of the turbines will not give rise to any material change in terms of disturbance/ displacement. The larger turbines will represent a potential increase in disturbance and collision risk but the infrequent hen harrier activity, together with the separation from known nesting sites and sub-optimal habitat at the windfarm site will result in a negligible impact in terms of increased disturbance/ collision risk for hen harrier. In addition, there will be no increased risk of collision for prey item passerine species as they typically fly at lower levels than the lowest point of the turbine.

10.6.22. Thus, there are no effects to hen harrier via reductions in habitat, range, population status or viability through permanent or temporary loss of foraging habitat, reduction in prey item species, landcover change or disturbance, or increased collision risk.

10.6.23. Notwithstanding the above, there are factors arising from the proposed development, in-combination with other plans/ projects, that can adversely affect the achievement of the conservation objective for which the Slieve Felim to Silvermines Mountains SPA is designated. The favourable conservation status of a species is achieved when its population dynamics data indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

10.6.24. The main potential impacts to the favourable conservation status of Hen Harrier relate to the permanent or temporary reduction or loss of suitable foraging habitat and disturbance/ displacement of foraging Hen Harrier (ex-situ during breeding

season). Land cover change may result in foraging habitat being temporarily unavailable to birds during key periods of the breeding cycle and the loss of foraging habitat within 2km of nest locations may result in reduced productivity and/ or nest success. Disturbance and displacement are most likely to occur during construction in critical periods of the breeding season.

10.6.25. In-combination impacts with other plans or projects may also give rise to reduction or loss of suitable foraging habitat or disturbance/ displacement of foraging Hen Harrier. Impacts will occur on land cover from provision of windfarm access roads, turbine hardstanding areas and substation compounds for the permitted windfarm. Landcover change will also take place from drainage, direct habitat loss through peat extraction or from forest maturation. There may be multiple sources of noise and visual intrusion and concurrent activity encountered sequentially by foraging birds. Overall, the potential sources of impacts relate to land use change; vegetation clearance; forestry felling; brash storage; earthworks; excavations; storage of overburden; movement of machinery; use of fuels, chemicals and cement-based compounds; dewatering of excavations; presence of construction personnel; and proximity to suitable ex-situ habitats.

10.6.26. Mitigation measures in the form of series of Project Design Environmental Protection Measures have been devised to avoid, prevent or reduce likely or significant effects on the environment. Those relating to Hen Harrier include the carrying out of breeding surveys to record all pre-nuptial activity, nesting activity and active nests within 2km of the construction works boundary prior to commencement, during and 3 years after construction. Other elements of the Whole UWF Project, such as UWF Related Works, will not be carried out during breeding season (March to August) and construction works within 1km of Hen Harrier roost will be limited to one hour after sunrise and one hour before sunset (Oct. to Feb.). No UWF Grid Connection works will be carried out within 2km of an active Hen Harrier nest.

10.6.27. The Slievefelim to Silvermines Mountains SPA provides excellent nesting and foraging habitat for breeding Hen Harrier and is one of the top sites in the country for the species. The conservation objective is to maintain or restore the favourable conservation objective of this species. Notwithstanding this, I am satisfied the proposed development will not have an adverse effect on the favourable conservation status of Hen Harrier and that the above mitigation measures are

sufficient for the proposed larger turbines and met masts amendment, in combination with other elements of the Whole UWF Project as well as other plans or projects, to avoid or reduce adverse effects on Hen Harrier to non-significant levels.

10.6.28. The works associated with the proposed development, in combination with other plans or projects, will take place on lands outside the SPA. Habitat within 2km of the windfarm comprises mostly of managed grasslands that are generally of limited use for breeding Hen Harrier. The habitat type within the subject site, comprising mostly of grasslands and mature forestry, together with the fragmented nature of suitable habitat, mean that foraging habitat within the site is sub-optimal and habitat in the SPA offers greater suitability for foraging Hen Harrier. There is, and will probably continue to be, a sufficiently large habitat to maintain the Hen Harrier population on a long-term basis and the proposed development will not interfere with the natural range of the species.

10.6.29. Hen Harriers will forage up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. However, it has been demonstrated, beyond reasonable and reliable scientific doubt that distance to nest is a limiting factor for foraging and that it is primarily foraging habitat loss within 2km of a Hen Harrier nest that may potentially have negative effects on breeding success. The nearest recently active nest within the SPA is 4.8km to west of the windfarm boundary, and whilst breeding attempts were confirmed within 2km of the grid connection route, works will take place mainly along public roads where habitat within 50m is generally unsuitable. Surveys have also confirmed that the usage of the appeal site by Hen Harrier has remained low over a substantial period of time. The proposed development will not therefore have significant effect on the ability of the species to maintain itself on a long-term basis.

10.6.30. Having regard to the above, I am satisfied that the proposed development, in-combination with other plans and projects, would not adversely affect the maintenance or restoration of the favourable conservation condition of Hen Harrier, which is listed as special conservation interests for the Slieve Felim to Silvermines Mountains SPA and therefore there can be no adverse affect on site integrity of the SPA.

10.6.31. The proposed larger turbines and met masts amendment will not change the in-combination disturbance effect of all elements of the Whole UWF Project on the SPA beyond that evaluated previously. Due to the separation distances between sources of operational displacement, and the separation distances to nearest nests, the in-combination impacts are evaluated as negligible. Collision risk with operating turbines within the Whole UWF Project area and other windfarms (Bunkimalta, Castlewaller and Milestone windfarm) is also evaluated at negligible due to the low levels of hen harrier within the Upperchurch Windfarm site and the flight behaviour of this species.

Relevant European site: Lower River Shannon SAC (Site code:002165)

10.6.32. Upperchurch Windfarm is at the eastern end of the SAC; however, only two of the proposed 22 turbines are within the River Shannon catchment and locally within the River Bilboa catchment.

10.6.33. The Site Synopsis states that this very large SAC stretches a distance of 120km from Killaloe in Co. Clare to Loop Head/ Kerry Head and encompasses the Shannon, Feale, Mulkear and Fergus estuaries. The Shannon and Fergus estuaries support the largest numbers of wintering fowl in Ireland and a number of Annex I Birds Directive species breed within the site.

10.6.34. It is noted that floating river vegetation is present throughout the major river systems within the SAC. Interesting bryoflora (*Schistidium alpicola* var. *alpicola)* has been recorded from in-stream boulders on the Bilboa in Co. Limerick. The valley sides of the Bilboa and Gortnageragh Rivers on higher ground to the north-east of Cappamore, support patches of semi-natural broadleaf woodland.

10.6.35. Species listed on Annex II of the Habitats Directive found within the SAC include Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad and Atlantic Salmon. The Mulkear catchment excels as a grilse fishery and spring fish are caught on the river itself. Rich bryophyte flora has been recorded in the Bilboa River, Mulkear catchment, the nearest of which is 7km downstream of the windfarm. Otter is also commonly found in the SAC and could be present in larger downstream watercourses.

10.6.36. There is potential for impact pathways between the windfarm and the Lower River Shannon SAC, on ‘water courses of plain to montane levels with the Ranunculion

fluitantis and Callitricho-Batrachion vegetation', Alluvial Forests, Atlantic Salmon, Sea Lamprey, Brook Lamprey, River Lamprey and Otter. Hydrological connectivity from the windfarm site to the Lower River Shannon exists via the Bilboa River.

Factors that can adversely affect the achievement of conservation objectives

10.6.37. At its nearest point, the subject site is approximately 3km to the east/ north-east of the Lower River Shannon SAC and Bilboa River. The windfarm site lies on the boundary Shannon and Suir river catchments and there are a number of watercourses within the immediate vicinity. Most of the windfarm site is located within the adjoining Suir catchment. The UWF Grid Connection site is predominantly within the Shannon catchment.

10.6.38. The conservation objectives for the Lower River Shannon SAC includes the maintenance of the favourable conservation condition of watercourses of plain to montane levels, with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, Brook Lamprey and River Lamprey. It is also the conservation objective to restore the favourable conservation objective of Sea Lamprey, Salmon, Otter and Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae).

10.6.39. The favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, are stable or increasing; the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and the conservation status of its typical species is favourable. The favourable conservation status of a species is achieved when its population dynamics data indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

10.6.40. There are factors arising from the proposed development, in-combination with other plans/ projects, that can adversely affect the achievement of the conservation objectives for which the Lower River Shannon SAC is designated. In the absence of mitigation measures, the proposed development alone, and in combination with other plans/ projects, has the potential to adversely affect the maintenance or

restoration of the favourable conservation condition of certain habitats and species for which the Lower River Shannon SAC is designated through decrease in instream aquatic habitat quality; changes in flow regime; riparian habitat degradation; spread of aquatic invasive species; direct mortality of fish and aquatic species; direct mortality of otter; disturbance/ displacement of fish and aquatic species; and disturbance/ displacement of otter.

10.6.41. There are no sources of impact associated with the proposed larger turbines and met mast amendment that could adversely affect the maintenance or restoration of the favourable conservation condition of any of the habitats and species for which the Lower River Shannon SAC is designated. However, in an unmanaged situation, in-combination impacts could occur from other elements of the Whole UWF Project from earthworks and water runoff flow paths; sediment; new crossing structures; use of fuels, chemicals & cement-based compounds; and tree felling. Other potential cumulative impacts from the UWF Whole Project could occur from the crossing of a watercourses of fisheries value and instream works at watercourse crossings where there is potential for introduction of non-native, invasive aquatic species. There are also watercourse crossing locations along UWF Grid Connection Route that have potential to support otter.

10.6.42. Mitigation measures for riparian and surface water impacts will include the implementation of a Sediment and Erosion Control Plan and Surface Water Management Plan; carrying out of any in-stream works during specified IFI period; restriction of construction traffic to construction works area; and refuelling and storage restrictions. Specific measures are also included within other elements of the Whole UWF Project to avoid or reduce effects on otter. An Environmental Management Plan addressing surface water quality management, invasive species management and waste management, has also been prepared and will be implemented.

10.6.43. The targets and attributes for each of the qualifying interests that potentially could be adversely affected by the proposed development are set out in Table 4 above. The above mitigation measures will ensure that watercourse vegetation is maintained and that the proposed development will not adversely impact on water quality, flow regime, sub-stratum, floodplain connectivity or marginal fringing. The measures will also mitigate any potential impact causing disturbance to fisheries species, including

Lamprey and Salmon. Disturbance will be limited to the footprint of instream works, access for aquatic species will be maintained and there will be no decline in spawning potential. There will also be no significant increase in barriers to connectivity for Otter and mitigation measures will ensure that couching sites are holts are not disturbed.

10.6.44. I am satisfied that with full and proper implementation of the above mitigation measures, it can be determined, beyond all reasonable and reliable scientific doubt, that the proposed larger turbines and met masts amendment, alone and as part of the Whole UWF Project, and in combination with other unrelated projects and activities, will not result in adverse effects on the integrity of the Lower River Shannon SAC. The mitigation measures will address the source of any potential impacts and are adequate, in particular, to protect against sedimentation and pollutants arising from surface water run-off to various watercourses in the River Shannon catchment.

Relevant European site: Lower River Suir SAC (Site code: 002137)

10.6.45. The Lower River Suir SAC consists of the freshwater and tidal stretches of the River Suir, which flows through counties Tipperary, Kilkenny and Waterford before entering the sea at Waterford Harbour. The Upperchurch Windfarm is within the Clodiagh and Multeen River sub-catchments in the Lower Suir catchment area.

10.6.46. The best examples of alluvial wet woodland in this European Site are found on islands just below Carrick-on-Suir and at Fiddown Island. Eutrophic tall herb vegetation occurs in association with alluvial forest and elsewhere where river floodplain is intact. Floating river vegetation is also evident along the tributaries of the River Suir, including the Multeen River.

10.6.47. It is noted that the site is of particular conservation interest for the presence of Annex II animal species, including Freshwater Pearl Mussel, White-Clawed Crayfish, Salmon, the three species of Lamprey and Otter.

10.6.48. There are potential impact pathways from the proposed development site, in-combination with the Whole UWF Project, on the qualifying interests of the Lower River Suir SAC, i.e. ‘Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation’, ‘Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels’, ‘Old sessile oak woods

with *Ilex* and *Blechnum* in the British Isles', alluvial forests, 'Taxus baccata woods of the British Isles', Freshwater Pearl Mussel, White-clawed crayfish, Sea/ Brook/ River Lamprey, Atlantic Salmon and Otter.

Factors that can adversely affect the achievement of conservation objectives

10.6.49. The Upperchurch Windfarm site is approximately 5km west of the Clodiagh River, 2.9km west of the Owenbeg River and 5.9km north-east of the Multeen River at points where these rivers enter the Lower River Suir SAC. A number of watercourses in the immediate vicinity of the Upperchurch Windfarm site drain to these rivers and to a lesser extent to rivers/ streams within the Shannon catchment. The UWF Grid Connection commences within the Clodiagh catchment but is mostly within the Shannon catchment.

10.6.50. The conservation objectives for the Lower River Suir SAC includes the maintenance of the favourable conservation condition of watercourses of plain to montane levels, with the Ranunculion fluitantis and Callitricho-Batrachion vegetation; Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels; White Clawed Crawfish and Otter. It is also the conservation objective to restore the favourable conservation condition of Old sessile oak woods with Ilex and Blechnum in the British Isles; Taxus baccata woods of the British Isles, Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae), Freshwater Pearl Mussel, Sea/ Brook/ River Lamprey, Salmon and Otter.

10.6.51. The favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, are stable or increasing; the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and the conservation status of its typical species is favourable. The favourable conservation status of a species is achieved when its population dynamics data indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

10.6.52. There are factors arising from the proposed development, in-combination with other plans/ projects, that can adversely affect the achievement of the conservation

objectives for which the Lower River Suir SAC is designated. Alluvial woodlands (91E0), yew woodlands (91J0) and old sessile oak woods occur at significant distances downstream of the permitted Upperchurch Windfarm. Hydrophilous tall herb fringe communities (6430) are associated with alluvial woodlands. Watercourses of plain montane levels (3260) can relate to lowland rivers or upland streams with floating or submerged vegetation and aquatic mosses. The potential for hydrological connection with these QI exists; however, there are no potential sources of impact from the proposed larger turbines and met mast amendment. Any potential impacts would relate to elements of the Whole UWF Project, such as movement of soil and machinery; earthworks, excavations and overburden storage; use of fuels, chemical and cement-based compounds; excavation dewatering; and tree felling and brash storage.

10.6.53. There are no sources of impact associated with the proposed larger turbines and met mast amendment that could adversely affect the maintenance or restoration of the favourable conservation condition of any of the habitats and species for which the Lower River Suir SAC is designated. However, in an unmanaged situation, in-combination impacts could occur from other elements of the Whole UWF Project from earthworks and water runoff flow paths; sediment; new crossing structures; use of fuels, chemicals & cement-based compounds; tree felling; and introduction of non-native, invasive aquatic species. However, there is no likelihood for indirect effects leading to sediment deposition at a scale that would alter channel morphology or flow regime.

10.6.54. Potential in-combination impacts on the qualifying interests of the Lower River Suir SAC are similar to those that potentially affects the Lower River Shannon SAC. Mitigation measures in the form of project design environmental protection measures and best practice measures, as well as the proposals set out within the Environmental Management Plan also apply to works that potentially impact on the Lower River Suir SAC.

10.6.55. The targets and attributes for each of the qualifying interests that potentially could be adversely affected by the proposed development are set out in Table 5 above. The above mitigation measures will ensure that watercourse vegetation is maintained and that the Whole UWF Project will not adversely or significantly impact on water quality, flow regime, sub-stratum, floodplain connectivity or marginal fringing. The

measures will also mitigate any potential impact causing disturbance to fisheries species, including Lamprey and Salmon. Disturbance will be limited to the footprint of instream works, access for aquatic species will be maintained and there will be no decline in spawning potential. Species such as White Clawed Crayfish and Freshwater Pearl Mussel are located at significant distances downstream from the Upperchurch Windfarm development to an extent that there will be no impact on baseline conditions. There will also be no significant increase in barriers to connectively for Otter and mitigation measures will ensure that couching sites are holts are not disturbed.

10.6.56. Having regard to the above, I would be satisfied that with full and proper implementation of mitigation measures, the proposed larger turbines and met masts amendment, in-combination with the other elements of the Whole UWF Project and other plans and activities, will not cause changes to the key indicators of conservation value, in particular water quality, and thus there is no potential for adverse impacts on the site integrity of the Lower River Suir SAC. Furthermore, the proposed development will not change the impact of the other elements of the Whole UWF Project on the SAC.

Relevant European site: Clare Glen SAC (Site code: 000930)

10.6.57. Upperchurch Windfarm is located approximately 18km east of Clare Glen SAC. However, this SAC comprising a wooded river valley located on the Limerick – Tipperary border, is approximately 1.7km to the south-west of the UWF Grid Connection at the townland of Scraggeen.

10.6.58. The woodland is of mixed composition and the qualifying interests of the site are Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] and Trichomanes speciosum (Killarney Fern) [1421]. Although planted with many exotic trees, the woodland is mature and conforms to a type listed on Annex II of the EU Habitats Directive. There are potential impact pathways from the Whole UWF Project on the qualifying interests of the Clare Glen SAC.

Factors that can adversely affect the achievement of conservation objectives

10.6.59. The potential for significant impacts on Clare Glen SAC only relates to the construction stage of the UWF Grid Connection. There are no sources of impact

associated with the proposed larger turbines and met masts amendment due to an absence of connectivity between the windfarm and Clare Glen SAC.

10.6.60. The Clare Glen SAC and a section of the UWF Grid Connection are within the Annagh (Tipperary) EPA local surface water body. Two watercourse crossings are proposed along this section of the UWF Grid Connection. Indirect effects to the qualifying interests of the SAC may occur via decreases in instream aquatic habitat quality, changes in flow regime, riparian habitat degradation or spread of invasive species.

10.6.61. The conservation objectives for the Clare Glen SAC includes the maintenance of the favourable conservation condition of Killarney Fern and the restoration of the favourable conservation condition of Old sessile oak woods with Ilex and Blechnum in the British Isles in Clare Glen SAC. The favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, are stable or increasing; the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and the conservation status of its typical species is favourable.

10.6.62. There are in-combination factors arising from the proposed development and the Whole UWF Project that can adversely affect the achievement of the conservation objectives for which the Clare Glen SAC is designated. The potential for hydrological connection affecting the QI of the SAC exists and potential sources of impact from the UWF Grid Connection may occur from culvert replacement works; parapet works; movement of soils and machinery; excavation works; use of hydrocarbons & cement-based compounds; and reinstatement works.

10.6.63. Works at the proposed crossing over the Clare River itself will be limited to the road surface and raising of parapet walls, and the dilution factor of the main channel will avoid any alteration to hydrology. Culvert replacement works may be required and there is potential at these locations for decreases in in-stream aquatic habitat quality; changes to flow regime; riparian habitat degradation; and spread of invasive aquatic species. However, the duration of any reductions in quality of downstream habitat with regards to QI are temporary, short-term and reversible. Flow regime changes can be avoided and a bespoke Invasive Species Management Plan including best practice biosecurity measures will be put in place.

10.6.64. The targets and attributes for each of the qualifying interests that potentially could be adversely affected by the proposed development are set out in Table 6 above. The above mitigation measures will ensure that the proposed development will not significantly impact on habitat distribution and diversity, variety of vegetation composition, and maintenance of hydrological conditions. Appropriate measures and controls will also be put in place to maintain the absence of negative indicator species.

10.6.65. Having regard to the above, I would be satisfied that with full and proper implementation of mitigation measures, the proposed development will not cause changes to the key indicators of conservation value, in particular water quality, and thus there is no potential for adverse impacts on the integrity of the Clare Glen SAC.

10.7. In-Combination Effects

10.7.1. The proposed development is described in the NIS as “proposed larger turbines & met masts amendment”. The proposed amendment relates to one of five elements of the “Whole UWF Project”, i.e., the Upperchurch Windfarm application granted permission in August 2014 for 22 no. wind turbines. The other elements of the Whole UWF Project are the UWF Grid Connection (ABP-306204-19); UWF Related Works (ABP-303634-19); UWF Replacement Forestry; and UWF Other Activities (haul route activities, overhead line activities, Upperchurch Hen Harrier Scheme and monitoring activities).

10.7.2. The NIS accompanying the planning application evaluates the in-combination impacts of the proposed larger turbines & met masts amendment and all elements of the Whole UWF Project on each of the four European Sites. In addition, the scoping for assessment for other unrelated projects includes Castlewaller Windfarm; Bunkimalta Windfarm; Rearcross Quarry; and forestry/ agriculture turf cutting.

10.7.3. The NIS evaluates the subject development impact on the qualifying interests for each European Site. An in-combination impact assessment is carried out, as well as individual evaluations of other projects (UWF Related Works, UWF Grid Connection, UWF Replacement Forestry and UWF Other Activities). An evaluation is then carried out for the Whole UWF Project. This analysis was complete and robust in

terms of plans and projects and no likely significant impacts arose taking into account any residual impacts from the proposed development.

10.7.4. The potential for adverse effects due to in-combination effects with other projects and activities was excluded based on the following:

- The proposed larger turbines and met masts amendment will take place on the same footprint of the permitted Upperchurch Windfarm,
- There are no sources of impact associated with the proposed larger turbines and met masts as the amendment only relate to the structures themselves.
- Due to absence of impact sources, the proposed larger turbines and met masts amendment will not change the in-combination effect of all elements of the Whole UWF Project.
- The separation distance between the zone of overlap between Upperchurch Windfarm and other permitted and operational windfarms.

10.8. Appropriate Assessment Conclusions

10.8.1. Having carried out screening for appropriate assessment of the proposed amendment to Upperchurch Windfarm permitted under Reg. Ref: 13/510003 (PL22.243040) to provide for larger turbines and meteorological masts, both individually and in combination with the Whole UWF Project and with other plans or projects, it was concluded that it would be likely to have a significant effect on the Slievefelim to Silvermines Mountains SPA, the Lower River Shannon SAC, the Lower River Suir SAC and the Clare Glen SAC. Consequently, an appropriate assessment was required of the implications of the project on the qualifying features of those sites in light of their conservation objectives.

10.8.2. Following an appropriate assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the Slievefelim to Silvermines Mountains SPA, the Lower River Shannon SAC, Lower River Suir SAC and the Clare Glen SAC or any other European site, in view of the sites' Conservation Objectives. No reasonable scientific doubt remains as to the absence of such effects.

10.8.3. This conclusion is based on:

- A full and detailed assessment of all aspects of the proposed project including proposed mitigation measures and ecological monitoring in relation to the Conservation Objectives of the Slievefelim to Silivermines Mountains SPA, the Lower River Shannon SAC, the Lower River Suir SAC and the Clare Glen SAC.
- Detailed assessment of in combination effects with other plans and projects including historical projects, current proposals and future plans and in particular the other elements of the Whole UWF Project (Upperchurch Windfarm (UWF),
- Identification and examination of the implications of the proposed development for species present on site and implications for habitat types and species found outside the boundaries of each European Site where they affect the conservation objectives of the European Site concerned.
- The location of the nearest recorded Hen Harrier nests in excess of 4km from the windfarm boundary - it has been demonstrated, beyond reasonable scientific doubt that distance to nest is a limiting factor for foraging and that it is primarily foraging habitat loss within 2km of a Hen Harrier nest that may potentially have negative effects on breeding success.
- Habitat within 2km of the windfarm comprises mostly of managed grasslands that are generally of limited use for breeding Hen Harrier, whereas habitat within the SPA offers greater suitability for foraging Hen Harrier.
- Hen Harrier surveys carried out from 2015 to 2020 confirming that usage of the site has remained low during the breeding season despite Slievefeilm to Silvermines Mountains being one of the strongholds for Hen Harrier in the country.
- Disturbance limited to the footprint of instream works, access for aquatic species will be maintained and there will be no decline in spawning potential.
- No significant increase in barriers to connectively for Otter and mitigation measures will ensure that couching sites are holts are not disturbed.
- The significant downstream distances of species such as White Clawed Crayfish and Freshwater Pearl Mussel from the proposed works.

11.0 **Overall Conclusion**

11.1. There is a consistent message throughout all levels of policy that there must be a transition to a low carbon and climate resilient society. This requires an increase in renewable energy generation and associated infrastructure, including wind and solar farms, grid reinforcement, storage development and interconnection. National Policy Objective 55 of the National Planning Framework seeks to *"promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050."* Objective RPO99 of the Regional Spatial and Economic Strategy also aims *"…to support the sustainable development of renewable wind energy (on shore and off shore) at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines."* At a local level, it is a core aim of the Development Plan *"to ensure that the county continues to be a leader in addressing climate change through the facilitation of appropriately located renewable energy developments and through supporting energy efficiency in all sectors of the economy."*

11.2. This is an application to An Bord Pleanála under the provisions of Section 37E of the Planning and Development Act, 2000 (as amended). It is proposed to increase the height of turbines and associated met masts within a windfarm development that was permitted by the Board in 2014. The original windfarm proposal was assessed as being consistent with all layers of climate policy and it follows that the principle of the larger turbines and increased production of renewable energy should be acceptable and in accordance with the overall policy aims of supporting the sustainable development of wind energy.

11.3. The application for the proposed larger turbines and met masts is assessed both individually and cumulatively within the EIA and Appropriate Assessment with all other elements of the Whole UWF Project and any other relevant plans and projects. Competent experts have reviewed the assessments carried out for the permitted windfarm and this information has been updated and incorporated into current assessments. The effects of passage of time in the baseline environment of Upperchurch Windfarm since 2013 are also set out for each environmental factor throughout the EIAR.

11.4. Baseline survey information in the current case goes beyond what might normally be submitted with a first-time planning application. Survey information pertaining to the site as far back as 2013 provides a longer-term picture of the usage of the site and surroundings by different species. Surveys and reviews were carried out up to 2020. I consider that this information is suitably up to date having regard to the lodgement dates of the planning application.

11.5. The main issues associated with the proposed development are the increased potential for collision risk to bats and birds, increased noise and shadow flicker, the visual impact of the larger turbines in the landscape and climatic impacts. The applicant has presented reasonable and reliable scientific evidence to conclude that there will be no significant adverse impacts arising from the proposed larger turbines and met masts. The only significant impact will be of a positive nature on climate arising from the increased generation of renewable energy.

11.6. The conservation objective for the Slieve Felim to Silvermines Mountains SPA is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Hen Harrier. The nearest wind turbines will be approximately 500m from the boundary of the SPA. The larger turbines represent a potential increase in disturbance and collision risk but the infrequent hen harrier activity, together with the separation from known nesting sites and the sub-optimal habitat at the windfarm site, will result in a negligible impact in terms of increased disturbance/ collision risk for hen harrier. In addition, there will be no increased risk of collision for prey item passerine species as they typically fly at lower levels than the lowest point of the turbine blade.

11.7. There will be no significant collision risk to kestrel, buzzard and golden plover due to the avoidance behaviour of these species. It is therefore considered that the proposed larger turbines will not materially increase collision risk to birds. In addition, optimal foraging, nesting or roosting habitat does not occur on site for raptors, waders or waterbirds and there are no migratory commuting routes recorded within the windfarm site. The significance of impact in terms of collision risk for the species of bat likely to be flying at the height of the turbine blades is not considered to increase from the permitted development due to the relatively infrequent use of the site by this species.

11.8. Noise levels from the proposed larger turbines will not increase beyond that already permitted due to their modern design with serrated edges on blades which will generate lower noise emissions. Modern turbines can be controlled to ensure that operational noise levels at the nearest dwellings will remain within acceptable levels. Shadow flicker control modules will also ensure that shadow flicker remains within acceptable levels.

11.9. The proposed larger turbines will not appear over-scaled relative to the underlying landform. The dimensional difference will not give rise to a noticeably increased effect on the overall character of the landscape compared to the permitted turbines. Furthermore, the principle of 22 no. wind turbines on site has already been established.

11.10. Overall, I am satisfied that the proposed development, in-combination with other plans and projects, would not adversely affect the favourable conservation condition of Hen Harrier, which is listed as special conservation interests for the Slieve Felim to Silvermines Mountains SPA. I also consider that the EIAR and Appropriate Assessment Report (Screening and NIS) provides the Board with adequate information to fully assess the cumulative impacts and in-combination effects of the proposed larger turbines and met masts, the Whole UWF Project and any other relevant plans or projects. Finally, the proposed larger turbines and met masts will facilitate a substantial increase in renewable energy output utilising infrastructure that is already authorised. The principle of a windfarm development on site has already been accepted and I would be satisfied that the proposed amendment and the Whole UWF Project complies with local, regional and national policy with respect to renewable energy and climate resilience.

12.0 **Recommendation**

12.1. On the basis of the above assessment, I recommend that the Board should grant permission for the proposed development for the reasons and considerations set out below.

13.0 **Reasons and Considerations**

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

- the nature, scale and extent of the proposed development,
- the decisions made in respect of an appropriate assessment,
- the national target to have up to 80% of electricity generated from renewable sources by 2030,
- national and local policy support for developing renewable energy, in particular the:-
    - National Planning Framework, 2018,
    - Climate Action Plan, 2021
    - Regional Spatial & Economic Strategy for the Southern Regional, 2020
    - the provisions as set out in the current Tipperary County Development Plan, including those regarding renewable energy development set out within the Tipperary Renewable Energy Strategy, 2016 and the appended Tipperary Wind Energy Strategy, 2016,
- the parent permission and the established principle of a windfarm at this site,
- the purpose of the proposed development, which is to optimise renewable energy output and the available grid capacity for the project,
- the pattern of development in the area (including the separation distance to dwellings) and the pattern of permitted development in the area,
- the submissions on file including that from the Planning Authority,
- the documentation submitted with the application, including the Appropriate Assessment Report (Screening and Natura Impact Statement) and the Environmental Impact Assessment Report,
- the report of the Inspector,
- 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.

Appropriate Assessment: Stage 1

The Board agreed with and adopted the screening assessment and conclusions carried out in the Inspector's report that the only European sites in respect of which the proposed development has the potential to have a significant effect are the Slievefelim to Silvermines Mountains Special Protection Area (Site Code: 004165); the Lower River Suir Special Area of Conservation (Site Code: 002137); the Lower River Shannon Special Area of Conservation (Site Code: 002165); and the Clare Glen SAC (Site Code: 000930).

Appropriate Assessment: Stage 2

The Board considered the Natura Impact Statement and other associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file and the Inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development on the aforementioned European sites in view of the sites' Conservation Objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

(a) the likely direct and indirect impacts arising from the development and the proposed development, both individually, when taken together and in combination with other plans or projects,

(b) the mitigation measures, which are included as part of the current proposal, and

(c) the Conservation Objectives for the European sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the aforementioned European sites, having regard to the sites' Conservation Objectives. In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' Conservation Objectives.

Environmental Impact Assessment:

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

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

(b) the Environmental Impact Assessment Report and other associated documentation submitted in support of the application,

(c) the submissions from the planning authority, the observers and prescribed bodies in the course of the application, and

(d) the Inspector's report.

The Board agreed with the summary of the results of consultations and information gathered in the course of the environmental impact assessment, and the examination of the information contained in the Environmental Impact Assessment Report and the associated documentation submitted by the applicant, and the submissions made in the course of the application as set out in the Inspector's report. The Board was satisfied that the Inspector's report sets out how these various environmental issues were addressed in the examination and recommendation which are incorporated into the Board's decision.

Reasoned Conclusion of the Significant Effects:

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, provided information which is reasonable and sufficient to allow the Board 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 Board 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 Board considered that the main significant direct and indirect effects of the proposed development on the environment are those arising from the impacts listed below.

The main significant effects, both positive and negative, are:

- Positive impacts on **population and human health** through positive changes on local health and the local economy from increased landowner and community

benefit payments and commercial rates payments. There will also be associated benefits in terms of improved physical, mental and social health and wellbeing, direct benefits to local projects, programmes and infrastructure and strengthening of the economy.

When the proposed development is assessed in the context of the extant permission on site, there will be a neutral change in terms of turbine noise, shadow flicker, health and tourism and amenity.

Construction phase impacts on Population and Human Health for the Whole UWF Project will be mitigated through a range of Project Design Environmental Measures and Best Practice Measures. Additional mitigation measures are proposed for shadow flicker occurrence.

- Potential adverse impacts on **Biodiversity** during the operational phase on certain bird and bat species from increased risk of collision with rotating blades. The significance of impact on bats is not considered to increase from the permitted development due to the relatively infrequent use of the site by the bat species most at risk (Leisler bat), its abundance nationally and the availability of suitable habitat in the surrounding landscape.

  There will be no change in impact significance in terms of collision risk for hen harrier, kestrel, buzzard and golden plover. Usage of the site for hen harrier continues to be sporadic and habitat suitability continues to be sub-optional. There is low flight activity for kestrel and documented avoidance behaviour of wind turbines by this species and for buzzard, kestrel, hen harrier and golden plover. There will be no change in terms of collision risk for passerines as these species of bird generally fly at low heights. It is proposed to reduce the rotational speed of turbine blades when idling to mitigate against any collision risk.

  There will be no changes in terms of construction and operational stage displacement/ disturbance or habitat loss to bats and birds beyond that already authorised for Upperchurch Windfarm due to construction or operational activity, habitat loss, habitat usage or availability of prey.

- Potential impacts on **Air** from the proposed larger turbines and met masts, i.e., noise impacts, shadow flicker and climate action.

The proposed larger turbines would not increase the noise levels of the windfarm beyond that already permitted due to serrated edges on blades which will generate lower noise emissions. The proposed larger turbines will be controlled to ensure that operational noise levels at the nearest dwellings will remain within acceptable levels.

Additional mitigation measures for shadow flicker control modules proposed to ensure that shadow flicker remains within acceptable levels. Turbines can be shut down to eliminate shadow flicker if a complaint arises.

- Positive significant impacts on **Climate** from the larger turbines due to the production renewable wind energy and a reduction in the use of fossil fuels.
- Potential impacts on **Landscape character and visual amenity** from the proposed 20% increase in the scale of the permitted turbines. Proposed larger turbines will not appear over-scaled relative to the underlying landform and the principle of 22 no. wind turbines on site has already been established. Dimensional difference does not necessarily result in a proportional increase in visual impact or noticeably increased effect on the overall character of the landscape compared to the permitted turbines.

The Board is satisfied that the reasoned conclusion is up to date at the time of making the decision.

The Board completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures referred to above, including proposed monitoring as appropriate, and subject to compliance with the conditions set out below, the effects on the environment of the proposed development, by itself and in combination with other development in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions set out in the Inspector's report.

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 energy policy, the National Planning Framework and the current Tipperary County Development Plan and would:

(a) make a positive contribution to Ireland's national strategic policy on renewable energy and its move to a low energy carbon future, and

(b) have an acceptable impact on the environment and on the amenities of the area.

The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

14.0 **Conditions**

1.	The development shall be carried out and completed in accordance with the plans and particulars including the mitigation measures specified in the Environmental Impact Assessment Report, lodged with the application, as amended by further information received by the Board on 26th day of November 2021, except as may otherwise be required in order to comply with the following conditions. Where such conditions require points of detail to be agreed with the planning authority, these matters shall be the subject of written agreement and shall be implemented in accordance with the agreed particulars. In default of agreement, the matter(s) in dispute shall be referred to An Bord Pleanála for determination. **Reason:** In the interests of clarity.
2.	Apart from any departures specifically authorised by this permission, the development shall be carried out and completed in accordance with the terms and conditions of the permission granted on under PL22.243040, and all subsequent permissions on site, as well as any agreements entered into thereunder. **Reason:** In the interests of clarity.
3.	The period during which the development hereby permitted may be carried out shall be 10 years from the date of this order. **Reason**: Having regard to the nature of the development, the Board considers it appropriate to specify a period of validity of this permission in excess of five years.

4.	This permission is for a period of 30 years from the date of commissioning of the wind farm. The wind turbines and related ancillary structures and temporary roadway shall then be removed and the site appropriately reinstated, prior to the end of this period, unless planning permission shall have been granted for their retention for a further specified period. Details of the reinstatement plan shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. **Reason**: To enable the impact of the development to be reassessed, having regard to the changes in technology and design during this period.
5.	All of the environmental, construction and ecological mitigation measures set out in the Environmental Impact Statement and Natura Impact Statement accompanying the application to the planning authority and other particulars submitted with the application to the planning authority shall be implemented by the developer in conjunction with the timelines set out therein, except as may otherwise be required in order to comply with the conditions of this order. **Reason:** In the interest of clarity and the protection of the environment during the construction and operation phases of the development.
6.	The applicant shall appoint a suitably qualified ecologist to monitor and ensure that all avoidance/mitigation measures relating to the protection of flora and fauna are carried out in accordance with best ecological practice and to liaise with consultants, the site contractor, the NPWS and Inland Fisheries Ireland. A report on the implementation of these measures shall be submitted to the planning authority and retained on file as a matter of public record. **Reason:** To protect the environmental and natural heritage of the area.
7.	The operation of the proposed development, by itself or in combination with any other permitted wind energy development, shall not result in noise levels, when measured externally at nearby noise sensitive locations, which exceed: (a) Between the hours of 7am and 11pm:

	i. the greater of 5 dB(A) $L_{90,10min}$ above background noise levels, or 45 dB(A) $L_{90,10min}$, at standardised 10m height above ground level wind speeds of 7m/s or greater ii. 40 dB(A) $L_{90,10min}$ at all other standardised 10m height above ground level wind speeds (b) 43 dB(A) $L_{90,10min}$ at all other times. Prior to commencement of development, the developer shall submit to and agree in writing with the planning authority a noise compliance monitoring programme for the subject development, including any mitigation measures such as the de-rating of particular turbines. All noise measurements shall be carried out in accordance with ISO Recommendation R 1996 "Assessment of Noise with Respect to Community Response," as amended by ISO Recommendations R 1996-1. The results of the initial noise compliance monitoring shall be submitted to, and agreed in writing with, the planning authority within six months of commissioning of the wind farm. **Reason:** In the interest of residential amenity.
8.	In the event that the proposed development causes interference with telecommunications signals, effective measures shall be introduced to minimise such interference. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the planning authority prior to commissioning of the turbines and following consultation with the relevant authorities. **Reason:** In the interests of protecting telecommunications signals and of residential amenity.
9.	Details of aeronautical requirements shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. Subsequently the developer shall inform the planning authority and the Irish Aviation Authority of the co-ordinates of the 'as constructed' positions and highest point of the telecoms pole and turbines (to the top of the blade spin).

	Reason: In the interest of air traffic safety.
10.	(a) Shadow flicker arising from the proposed development, by itself or in combination with other existing or permitted wind energy development in the vicinity, shall not exceed 30 hours per year or 30 minutes per day at existing or permitted dwellings or other sensitive receptors. (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 commissioning of the proposed wind farm, this report shall be submitted to, and agreed in writing with, the planning authority. **Reason:** In the interest of residential amenity.
11.	(a) Prior to commencement of development, details of the following shall be submitted to, and agreed in writing with the planning authority: (i) A Transport Management Plan, including details of the road network/haulage routes indicated in the Environmental Impact Assessment Report including the vehicle types to be used to transport materials on and off site, and a schedule of control measures for exceptional wide and heavy delivery loads. (ii) A condition survey of the roads and bridges along the haul routes to be carried out at the developer's expense by a suitably qualified person both before and after construction of the wind farm development. This survey shall include a schedule of required works to enable the haul routes to cater for construction-related traffic. The extent and scope of the survey and the schedule of works shall be agreed with the planning authority/authorities prior to commencement of development. (iii) Detailed arrangements whereby the rectification of any construction damage which arises shall be completed to the satisfaction of the planning authority/authorities.

	(iv) Detailed arrangements for temporary traffic arrangements/controls on roads. (v) A programme indicating the timescale within which it is intended to use each public route to facilitate construction of the development. (b) All works arising from the aforementioned arrangements shall be completed at the developer's expense, within 12 months of the cessation of each road's use as a haul route for the proposed development. **Reason:** To protect the public road network and to clarify the extent of the permission in the interest of traffic safety and orderly development.
12.	Prior to commencement of development, a detailed Construction Management Plan for the construction stage shall be submitted to, and agreed in writing with, the planning authority generally in accordance with the proposals set out in the Environmental Impact Assessment Report. The Construction Management Plan shall incorporate the following: (a) a detailed plan for the construction phase incorporating, inter alia, construction programme, supervisory measures, noise management measures, construction hours and the management of construction waste, (b) a comprehensive programme for the implementation of all monitoring commitments made in the application and supporting documentation during the construction period, (c) details of a pre-construction survey to identify/confirm the absence of any Hen Harrier nests within the subject site, and including a work cessation protocol including appropriate buffer in the vicinity of any identified nest, until the nest has been vacated at the end of the breeding season, (d) a Japanese Knotweed Management Plan, (e) an emergency response plan, and

	(f) proposals in relation to public information and communication. A record of daily checks that the works are being undertaken in accordance with the Construction Management Plan shall be available for public inspection by the planning authority. **Reason:** In the interests of environmental protection and orderly development.
13.	Prior to the commencement of development, community gain proposals shall be submitted to, and agreed in writing with, the planning authority. **Reason:** In the interest of the proper planning and sustainable development of the area.
14.	On full or partial decommissioning of the wind farm or if the wind farm ceases operation for a period of more than one year, the masts and the turbines concerned, shall be removed and all decommissioned structures shall be removed within three months of decommissioning. **Reason:** To ensure satisfactory reinstatement of the site upon cessation of the project.
15.	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 relevant 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 relevant 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 relevant planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination. **Reason:** To ensure a satisfactory standard of development.
16.	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 Bord 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.

Donal Donnelly
Senior Planning Inspector

28th January 2022