An Bord Pleanála

Inspector's Report

ABP-306204-19

Development	Development consisting of a new 110kV substation, underground 110kV cabling and ancillary works to connect the already consented Upperchurch Windfarm substation to the existing 110kV overhead line.
Location	Mountphilips, County Tipperary
Planning Authority	Tipperary County Council
Applicant(s)	Ecopower Developments Ltd.
Type of Application	Application under the provisions of Section 182A of the Planning and Development Act, 2000 (as amended)
Observer(s)	1. Irish Water 2. Transport Infrastructure Ireland 3. Rear Cross Tidy Towns Committee 4. Emer Ó'Siochrú & Toal Ó'Muiré 5. Tipperary County Council (c/o James Hayes) 6. Ned & Carmel Buckley

7. James & Tanya Embleton
8. Peter Sweetman with and on behalf of Paul & Edel Grace

Date of Site Inspection	20th May 2020
Inspector	Donal Donnelly

Contents

1.0 Introduction

1.1. An application under the provisions of Section 182A of the Planning and Development Act, 2000 (as amended) was received by the Board from Ecopower Developments Ltd. for the development of a 110kV grid connection from a permitted windfarm to a new substation located at the Killonan-Nenagh 110kV overhead line in Mountphilips, Newport, Co. Tipperary.

1.2. This application follows an earlier refusal of permission for an alternative grid connection parallel and to the north of the current proposal. In addition, there is a concurrent appeal with the Board for works relating to the windfarm that did not constitute strategic infrastructure development. For clarity, the cases relating to Upperchurch Windfarm are summarised as follows:

- Upperchurch Windfarm – Reg. Ref: 13/510003 (PL22.243040): Permission granted in August 2014 for 22 no. wind turbines.
- Upperchurch Windfarm grid connection – Ref: ABP-301959-18: Permission refused for 110kV electrical substation and underground cabling in December 2018 on lands parallel and to the north of the R503 through the Slieve Felim and Silvermines Mountain SPA.
- Upperchurch Windfarm Related Works – Reg. Ref: 18/600913 (ABP-303204-19): Concurrent application for windfarm enabling works

2.0 Site Location and Description

2.1. The proposed grid connection (UWF Grid Connection) extends from the proposed 110kV electrical substation in the townland of Mountphilips to the north of Newport over a distance of approximately 30.5km to the permitted substation at the Upperchurch Windfarm. From west to east, the grid connection will pass through the townlands of Mountphilips, Coole, Freagh, Foildarrig, Oakhampton, Rockvale, Mackney (O'Brien), Mackney (Bourke), Ahane, Newross, Castlewaller, Carrowkeale, Tullow, Cooldrisla, Derryleigh, Kilnacappagh, Scraggeen, Derrygareen, Inchadrinagh, Knockancullenagh, Fanit, Lackamore, Tooreenbrien Upper, Tooreenbrien Lower, Reardnogy Beg, Reardnogy More, Shanballyedmond,

Baurnadomeeny, Coonmore, Foildarragh, Kilcommon, Loughbrack, Knocknabansha, Knockmaroe, Knockcurraghbola Crownlands and Knockcurraghbola Commons.

2.2. The proposed substation will be located to the east of the existing Killonan to Nenagh 110kV overhead line. Access to the substation will be through a number of agricultural fields from a new access on a local road. The cable route will then head south along the local road before turning south-east, south and west on local roads, and joining the R503 at Newport GAA Club. The cable route will continue along the R503, passing through the village of Rear Cross and overlapping with the UWF Related Works boundary on the R503 to the south-west of the permitted windfarm. The final section will see the proposed grid connection follow the alignment of the UWF Related Works boundary along local roads to the permitted windfarm substation.

2.3. The area surrounding the proposed grid connection is characterised mainly by upland rolling hills and valleys forming part of the Slieve Felim Mountains to the south and Slivermines Mountains to the north. The highest mountains nearby are Slievekimalta or Keeper Hill (694m OD) approximately 6km north of the grid route and Mauherslieve or Mother Hill (543m OD) approximately 4km north. In the Slieve Felim Mountains, Cullaun (460m OD) is approximately 2km to the south. A section in the centre of the cable route continues along the Clare River valley before crossing at Tooreenbrien Bridge. The grid connection will also cross the Mulkear River to the east at Rockvale Bridge and the Bilboa River at Anglesea Bridge further to the east of the route. It total, there will be 63 watercourse crossings. Most of the grid connection is within the River Shannon catchment.

2.4. The main land uses along the route of the grid connection are hill farming and forestry. The R503 is the main road connecting Thurles to the east to Newport and on to Limerick City in the west.

3.0 **Proposed Development**

3.1. Planning permission is sought for the construction of a 110kV electrical substation and underground 110kV electrical cables and associated communications cables from the proposed substation to an already consented (but not constructed) Upperchurch Windfarm substation.

3.2. The proposed 110kV electrical substation at Mountphilips will consist of the following:

a) 1 no. electrical substation compound and palisade fencing, measuring 98m x 105m;

b) 1 no. electrical substation control building measuring 25m x 15m and 8m in height;

c) 6 no. lightning protection monopoles measuring up to 18m in height;

d) Associated electrical apparatus, plant and equipment; overhead and underground electrical and communications cabling and ancillary works;

e) Permanent widening of 1 no. existing farm entrance;

f) 480m of permanent access road measuring 4.5m in width;

g) 2 no. end masts measuring up to 16m in height;

h) Temporary access road to end masts;

i) 1 no. temporary construction compound;

j) 1 no temporary and 2 no. permanent watercourse crossings;

k) Temporary and permanent drainage systems; and

l) ancillary works.

3.3. The proposed underground cabling will consist of the following:

a) 30.5km of underground 110kV electrical cables and associated communications cables;

b) 42 no. underground joint bays;

c) Replacement of 13 no. existing watercourse culverts;

d) Raising of road level and parapet wall heights at 3 no. bridges; and ancillary works.

3.4. An Environmental Impact Assessment Report and Natura Impact Statement (Stage 2 Appropriate Assessment) have been prepared in respect of this application. A full list of documents submitted with the planning application and appeal is set out below.

3.5. The proposed development (UWF Grid Connection), is one of five elements of the Whole UWF Project comprising the following:

- Element 1: UWF Grid Connection (current SID case);
- Element 2: UWF Related Works (concurrent appeal case Reg. Ref: 18/600913/ ABP-303204-19);
- Element 3: UWF Replacement Forestry (concurrent forestry licence application to Department of Agriculture, Forestry and the Marine);
- Element 4: Upperchurch Windfarm (granted in 2014 under PL22.243040);
- Element 5: UWF Other Activities (no planning required).

3.6. **Accompanying Documents**

- Volume A: Planning application documents
- Volume B: Planning Drawings
- Volume C1: EIAR Non-Technical Summary
- Volume C2: EIAR Main Report
- Volume C3: EIAR Figures
- Volume C4: EIAR Appendices
- Volume D: Environmental Management Plan for UWF Grid Connection
- Volume E: Appropriate Assessment Report (two parts: Screening & NIS)
- Volume F: Reference documents for other elements of the Whole UWF Project:
- Volume F1 to F3: UWF Related Works EIAR
- Volume F4: Environmental Management Plan for UWF Related Works
- Volume F5 to F7: UWF Replacement Forestry EIAR
- Volume F8 to F10: Upperchurch Windfarm EIS, Inspector's Report and Board's decision.

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.

An Bord Pleanála Ref: 22.VC0098

4.1.2. The Board determined that the substation and associated works and 110 kV underground grid connection is strategic infrastructure and that the 'associated works' relating to the permitted windfarm ought to be subject to a separate planning application to the local authority.

An Bord Pleanála Ref: 18/600913 (ABP-303634-19

4.1.3. Concurrent appeal to the Board against Tipperary County Council's notification of decision to refuse permission in January 2019 for UWF Related Works comprising:

a) 17.9km of internal windfarm cabling;

b) 13 no. haul route works, to facilitate the haulage of turbine components to the Upperchurch Windfarm (UWF) site;

c) 1 no. telecom relay pole, measuring 18m in height, with telecoms relay equipment attached;

d) 3 no. realigned windfarm roads, to realign two lengths of consented UWF roads and to provide access to the telecoms relay pole;

e) Change of use of an existing 'agricultural' entrance to ' agricultural and forestry' entrance; and

f) Ancillary works.

4.1.4. The reasons for refusal in the Council's decision related to impact on the Hen Harrier and bat species.

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 provided 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 proposal with respect to Hen Harrier. It was noted that sufficient consideration has not been provided regarding the routing of the cable in the 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 Hen Harrier within its sensitive roosting and breeding areas.

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 Related 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: 05/510024 (PL22.215223)

4.6. 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).

4.7. 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

4.8. 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 Application for Approval to An Bord Pleanála

5.1. Introduction

5.1.1. An application was submitted by Ecopower Developments Ltd. to the Board seeking planning approval for the UWF Grid Connection under the provisions of Section 182A of the Planning and Development Act, 2000 (as amended). The application was accompanied by the following information:

- Volume A – Planning Application Documents:
  - Planning application form
  - Letters of landowner consent
  - Copies of site notices
  - Schedule of submitted documents
  - EIA Portal confirmation notice
  - Copy of notice of the application being lodged which was sent to prescribed bodies
- Volume B – Planning drawings:
  - Site location maps
  - Site layout maps
  - Mountphilips substation plans and elevations
  - Cross-sections of cable trench

- Bridge/ culvert cable crossing drawings

- Volume C – Environmental Impact Assessment Report:
  - Non-technical summary
  - Main EIAR document
  - EIAR Figures
  - EIAR Appendices
- Volume D – Environmental Management Plan
- Volume E – Appropriate Assessment Reporting
- Volume F – Reference documents for Whole UWF Project:

5.1.2. A standalone website containing application information was provided by the applicant: http://upperchurchwindfarmgridconnection.ie/

5.1.3. In accordance with the provisions of Section 182A(4)(b) of the Act, a copy of the application, EIAR and NIS were sent to Tipperary County Council and the following prescribed bodies:

- Minister for Culture, Heritage and the Gaeltacht
- Minister for Communication, Climate Action and Environment
- Transport Infrastructure Ireland
- An Taisce.
- The Heritage Council
- Inland Fisheries Ireland
- Commission for Regulation of Utilities
- Health Service Executive
- Environmental Protection Agency
- IDA Ireland
- Irish Water
- Waterways Ireland

- Coillte
- Office of Public Works.

6.0 Written Submissions/ Observation Received by the Board

6.1. Tipperary County Council

6.1.1. A submission dated 13th February 2020 and received by the Board from the Planning Authority sets out a project overview, relevant planning history, internal referrals and considerations including planning policy, natural heritage, architecture and archaeology, landscape, and carrying capacity and safety of the road network serving the proposed development . The main points are summarised as follows:

- Road Section – no objection in principle subject to conditions regarding impact on road users, construction management plan, reinstatement of roads, requirement for a chartered civil engineer (large number of bridges and culverts to be crossed), road opening licence, road closure and co-ordination of works with Castlewaller Windfarm. R503 identified as a Strategic Road in the Development Plan.
- Environmental and Waste Section – in general, environmental and ecological issues are comprehensively dealt with and all proposed mitigation measures, commitments and recommendations are to be enacted. Some minor issues regarding holding tank design and noise limits that could be addressed by way of condition.
- Chapter 16 – Heritage section of the EIAR provides no details of record of protected structures within 500m of construction works area or within 2km of Mountphilips substation.
- No Architectural Heritage Impact Assessment (AHIA) has been prepared for Torreenbrien Bridge (RPS Ref: S801) – works proposed to raise parapet walls. AHIA prepared for Anglesey Bridge.
- Board may wish to consult with OPW regarding flooding issues, Catchment Flood Risk Management Studies (CFRAMS) and Section 50 Licences.

- Landscape Character Assessment of Tipperary, 2016 is the relevant document considering the proposed development on the receiving landscape.

6.1.2. The Planning Authority recognises that the purpose of the proposed development is to connect the permitted Upperchurch Windfarm substation to the national grid via the proposed Mountphilips substation and thereby export electricity from the windfarm. The proposed development is considered as enabling works to an already permitted development and therefore the Planning Authority would view the principle of same favourably.

6.1.3. The Planning Authority has no comment to made regarding community gain; however, it is considered that the Tipperary County Development Contributions Scheme, 2020 applies to the proposed development. A total of 13 no. conditions are suggested to the Board relating to drawings and documentation; works to protected structures; bat surveys; archaeology; invasive species; access and sightlines; landscaping; substation foul effluent holding tank; noise; road conditions and maintenance; and development contributions.

6.2. Prescribed Bodies

6.2.1. Submissions on the application were received from two prescribed bodies. These are summarised as follows:

- **Transport Infrastructure Ireland** – Cable routing along regional and local roads with no direct implications for national road network in the area.
- No specific observations to make in relation to the principle of the proposed development.
- EIAR concludes that impact of haul route activities on the N69, N18 and M7 will be neutral.
- Recommended that the applicant consults with Council as roads authority on potential haul routes and on any works proposed that affect the national road network in terms of operational requirements, such as delivery timetabling, potential costs and associated requirements.
- Where relevant, consultation with Motorway Maintenance and Renewal Contracts contractor or PPP company should be undertaken.

- Details of any works impacting on national roads agreed between the applicant/ developer and the road authority should be notified to TII.
- Any temporary works to existing national road junctions to facilitate turbine delivery shall comply with standards outlined in TII publications and shall be subject to Road Safety Audit as appropriate.
- Permit must be obtained by any operator to transport a vehicle or load whose weight falls outside limits allowed by Road Traffic (Construction Equipment & Use of Vehicles) Regulations, 2003, SI5 of 2003.
- All structures along haul route should be checked and assessment carried out by developer to confirm their capacity for any abnormal load where weight exceeds that permissible under Road Traffic Regulations.
- **Irish Water** – Proposed development has the potential to impact an Irish Water Drinking Water Source at Newport Regional Water Supply abstraction point (cable route 350m from Newport WTP river intake point on Mulkear River).
- There are 3 wells for public water supply (GW1 – GW3) used to augment supply located in a compound adjacent to local road in Castlewaller townland – cable route passes along this road.
- Applicant should provide details as further information of measures to ensure that there will be no negative impact to Irish Water's Drinking Water Source during construction and operational phases.
- Applicant shall submit a diversion enquiry to Irish Water as a significant number of watermains and fouls sewers will be impacted by the proposed works.

6.3. Observations

6.3.1. A total of five observations were received by the Board from third parties. These are summarised as follows:

- **Rear Cross Tidy Towns Committee** – concerns regarding the laying of 110kV underground cables through the village of Rear Cross.

- Committee recently lobbied Council representatives to have roadways in the village resurfaced, including new road markings, footpaths repaired and installation of additional drainage gullies.
- Road works have greatly improved the appearance of the village and reflected scoring in Tidy Towns competition.
- Council works could be compromised by the proposed works – seek assurances that roadways and their appearance will be reinstated to the current high standards without any road scarring.
- **Emer Ó'Siochrú & Toal Ó'Muire** – Submission for cable route through SPA does not differ in a substantial way from the earlier submission except that it will be buried along the public road and over heritage stonework bridges within the SPA.
- Supports neighbours Edel & Paul Grace in respect of their submission on impact on wildlife contrary to the EIA and Habitats Directives, and in particular the clarification provided by the following judgements:
    - Case C-258/11, Peter Sweetman and Others v An Bord Pleanála
    - Case C-164/17, Edel Grace & Peter Sweetman v An Bord Pleanála
    - Case C-323/17, People Over Wind & Peter Sweetman v An Bord Pleanála
    - Case C-461/17, Brian Holohan and Others V An Bord Pleanála
- Residents in the affected area were not informed as is required under the Planning and Development Regulations.
- Negative impacts of grid route and amended windfarm does not meet the current and proposed guidelines for developer-led windfarms – turbines breach the minimum distance to dwelling standards for sound and infrasound impacts, as well as for flicker location design.
- Proposed windfarm development has led to the forced abandonment of observer's plans for an eco-visitor centre on their farm at Coumnageeha. Proposal will also impact on the promotion of visitor walking routes.

- Proposed windfarm and ancillary works would not meet the current public policy for meaningful economic community participation as outlined in the recent consultation call for a new RESS.
- **James & Tanya Embleton** – Windfarm was granted without reference to the grid link and now needs to be properly reopened to make a full cumulative assessment of the whole project.
- Route is largely within the SPA – all of it is so close that it should be treated as part of the SPA and will cause considerable disturbance, passing through Hen Harrier foraging areas for most of its length.
- Silt and sediments being disturbed along with leaching pollutants are responsible for decline in freshwater pearl mussels and other species – grid connection crosses 65 watercourses, many of which feed sensitive sites lower down the river systems.
- Mulkear River which leads to the Newport River and thereby the Cloon population of Freshwater Pearl Mussel has already been badly affected by silt and nutrients released by poor forestry practices within the SPA on Keeper Hill.
- Route follows an unstable road which suffers subsidence and ongoing repair – should not go hand in hand with high voltage cables.
- There appears to be no consents for work under the road surface or in relation to accessing 65 water crossings.
- Will Sulphur Hexafluoride be used in the substation or grid link? More environmentally friendly alternatives need to be considered.
- Many vulnerable species that used the SPA have not been properly considered.
- Surveys of Upperchurch Windfarm are now out of date and out of sync with more recent surveys at the other end of the site.
- Appropriate Assessment annexes 3 & 4 are the same – Annex 4 should contain aquatic habitats, species fieldwork and survey results.
- **Ned & Carmel Buckley** – Application does not have letters of consent from all landowners along the grid route.

- Cumulative assessment leaves out Newport water treatment plant and other windfarms in the area. Grid infrastructure for the Castlewaller windfarm has not been submitted to the planning authorities yet.
- Environmental consultants have given a disclaimer in NIS – should not allow for uncertainty.
- With multiple crews working at different points, the odds of spreading highly invasive species into a protected habitat are too high.
- Application does not make clear if cumulative impact is carried out on the permitted windfarm or the windfarm as reimagined and refused by the Council.
- Habitat Directive applies to the full development and if the entire plan does not comply with the legislation, none of it does.
- **Edel & Paul Grace and Peter Sweetman** – application is invalid as it does not have the required landowner consent, (Daly V Kilronan Windfarm Ltd.).
- North Tipperary County Development Plan, 2010-2016 does not comply with provisions regarding appropriate assessment – admit that cumulative impact on either people or habitats or already built and consented turbines in the area is unknown.
- In application for windfarm element of the project, the Department of Arts, Heritage and the Gaeltacht advised the developer that the development would result in loss of foraging habitat for pairs of Hen Harrier breeding within the SPA and instructed that the development should be treated as if within the SPA.
- It does not matter if the windfarm element has permission from a previous application when the entire project is examined – where a plan subsequently proves likely to give rise to deterioration or disturbance, the application of Article 6(2) makes it possible to satisfy the essential objective of preservation and protection of the quality of the environment.
- Although developer can argue that the new habitat proposed is outside the SPA boundary, the fact remains that this project is located within the SPA and has the potential to impact on the qualifying interests of the SPA.

- Court has previously ruled that measures provided in a project aimed at compensating for the negative effects of the project cannot be taken into account in the assessment of the implications of the project provided for in Article 6(3).
- An assessment of the implications of a plan or project for the protected site's conservation objectives is not 'appropriate' where updated data concerning the protected habitat and species is lacking. Post construction monitoring reports for existing wind farms have not been submitted in some instances; therefore, no planning authority or competent ecologist could make an informed judgement about the cumulative effect of this project with existing wind turbines in the area.
- Member States are required to take preventative measures to avoid deterioration and disturbance connected with a predicable event, activity or process – these measures apply to all species and habitats for which the sites have been designated, and should also be implemented, if necessary, outside the sites.
- Disturbance of a species must be avoided in so far as it could be significant in relation to the Directive's objectives. On the other hand, deterioration of a natural habitat or a habitat of a species is not qualified by the need to be significant in relation to the Directive's objectives – it must simply be avoided altogether.
- Deterioration and disturbance should be assessed against the conservation objectives of the site and the conservation condition of the species and habitat types present in the site using the same criteria as for the Article 6(3) procedure – should be interpreted in a dynamic way, according to the evolution of the conservation condition of the habitat or of the species in that site.
- Provisions of Article 6(3) are not restricted to plans and projects that exclusively occur in or cover a protected site – they also target plans and projects situated outside the site but likely to have a significant effect on it regardless of their distance from the site in question (cases C-98/03, para. 51 and C-418/04m para's. 232 & 233).
- NIS begins with the disclaimer that "no method of assessment can completely remove the possibility of obtaining partially imprecise or incomplete information. In line with best practice, any limitation to the methods applied or constraints

however are clearly identified within the main body of this document." NIS does not comply with the Habitats Directive.

- Section of application for grid works is very similar to the previously refused application – relocation from original planned route across country through the SPA onto the road through the SPA does not make it any more acceptable.

6.4. Applicant's response to submissions

6.4.1. The applicant responded to the issues raised in observations as follows:

Response to Tipperary County Council:

- Welcomes that Tipperary County Council's would view favourably the principle of the proposed development as enabling works to an already permitted development.
- RPS Ref: S799 – Rear Cross Roman Catholic Church and RPS Ref: S800 – Rear Cross National School are not within the footprint of the underground cabling development and as such are not vulnerable to disturbance/ damage. Project Design Measures PD05 and PD14 and Outline Construction Methodology GC-OCM-17 will protect all cultural heritage sites. Applicant will also observe Council's suggested Condition 2 for protection of architectural heritage.
- Compliance with Council's suggested Condition 7(i) would pose difficulties in the context of a restriction set out in the biodiversity Project Design Measures on timing of construction works along the road, i.e. works along the road will only be carried out during September to February inclusive.

Response to Rear Cross Tidy Towns Committee:

- Roads Section of Council has no objection in principle subject to conditions regarding impact on road users, reinstatement, co-ordination of works, etc. UWF Grid Connection will be subject to compliance with all planning conditions.
- Applicant will liaise with tidy towns committee during construction and appearance of village will not be diminished by cabling works.

Response to Emer Ó'Siochrú & Toal Ó'Muiré

- There was considerable public notice of the proposed new grid route in the townlands affected.
- Proposed Whole UWF Project will not adversely affect tourism in the area and there is no evidence that tourists in general object to windfarm projects. According to EIAR, any reduction in air quality, including increase in ambient noise or vibration, will have a neutral effect on tourism revenue and on local walking routes.
- EIAR, Chapter 7 – Human Health concludes that there are no potential negative health impacts. There will be positive effects due to increased employment.
- Upperchurch Windfarm has been successful in the recently announced RESS 1 action – community benefit fund will be established and will result in €400,000 per annum for enhancement of the local community.

Response to Ned & Carmel Buckley Submission

- Letters of consent from private landowners and Tipperary County Council have been submitted with the application.
- Potential for cumulative effects with the Newport Regional Water Supply is evaluated for all sensitive aspects and environmental factors and is scoped out in EIAR.
- Newport Wastewater Treatment Plant is at a pre-construction/ design stage and no planning application has been submitted for the upgrade works. No significant cumulative impacts are likely in any case due to its location downstream of Newport Town, the separation distance with the UWF Grid Connection works, and it is likely that water protection measures will form part of the planning conditions for the upgrade works.
- Potential Bunkimalta windfarm, consented Castlewaller windfarm, the existing Milestone, Garracummer, Hollyford and Knockastanna windfarms and the existing Gortnahalla turbine have been included in the scoping exercise. Other windfarms in the wider area were not included as there is no potential for cumulative effects with the UWF Grid Connection.

- Ecologist confirmed that “the UWF Grid Connection NIS provides precise information that is complete in nature. All data was collected using best practice methods. No limitations are identified in the main body of the (NIS) text. There is no information or lacunae in the NIS document and as such the NIS complies with the requirements of the habitats of the Habitats Directive.”
- Invasive Species Management Plan will be implemented to prevent the spread of invasive species and an invasive species specialist will monitor each infestation location during the critical stages of construction works.

Response to James & Tanya Embleton submission

- A number of court cases since O’Grianna and others v An Bord Pleanála [2014] IEHC 632 have confirmed that the law does not require that planning permission for all integral parts of large projects must be sought or obtained at the same time, or as part of a single application to one consenting authority. The requirement is that the cumulative effects of all integral parts of a project must be assessed in any EIA.
- Potential for direct and indirect effects, both within an ex-situ the Slievefelim to Silvermines Mountains SPA was comprehensively evaluated in the AA Reporting – evaluation concludes that the magnitude of habitat reduction or loss effects, or disturbance or displacement effects (during either the breeding season or non-breeding season) as a result of the UWF Grid Connection, either alone or in-combination, will be negligible and there will be no adverse effects on the integrity of the SPA.
- A total of 23 European Sites were screened for potential impacts and 4 were carried forward for further evaluation including 3 no. SACs – Lower River Shannon SAC, Lower River Suir SAC and Clare Glen SAC. Potential for sediment or pollutants to affect the qualifying interest habitat or species, alone or in combination, evaluated as have negligible to low magnitude, with no adverse effects on the integrity of any of the SACs.
- Peat Probe Survey was carried out and five locations of deeper peat close to the road were identified and visual survey identified section of the regional road that may not be sitting on competent ground. Floating road trench was designed and

will be used, and this will improve the strength of the road at these sections. Most of the road is stable within the construction works area, being predominantly of 'excavate and fill' construction and located on firm ground.

- Road safety record of roads along the route is good and a Road Safety Audit has been conducted – potential for increased risk of road accidents was scoped out.
- Electricity Regulation Act, 1999 provides authorised developers with the power to lay electricity lines which are equivalent to those enjoyed by the ESB under statute – during works at watercourse crossing locations, all works will take place from the road pavement, including the operation of machinery, (EIAR Section 5.2.2.3.3: Watercourse Crossing Works for the 110kV UGC and Section 5.3.1.2: Construction Works Area Boundary).
- Sulphur Hexafluoride (SF6) will not be required for the underground cable and very small amount is required for arc suspension within the circuit breakers at the substations – will not give rise to risk of major accident.
- NIS concludes that magnitude of habitat reduction or loss effects as a result of the grid connection, either alone or in combination, will be negligible, and that there will be no adverse effects on the integrity of the SPA.
- NIS examines effects on Hen Harrier as a result of a reduction in prey items and concludes that the effect will be of negligible magnitude, with no adverse effect on the integrity of the SPA.
- Effects to any other species which may occur within the SPA have been evaluated and this includes results of comprehensive ecological surveys along the route, and presents survey records and a description of the occurrence of general bird species, bay species, other mammal species, amphibians and Marsh Fritillary butterfly – effects to these species, either alone or cumulatively, will not be greater than slight significance.
- NIS has taken into account the findings of additional surveys since the granting of permission for the windfarm in 2014. These are the UWF Flight Activity Surveys in 2019 (Appendix 6 of NIS) and Hen Harrier Surveys at Upperchurch Windfarm in 2015 and 2017 (Appendix 7 of NIS).

- Implications for habitat and species outside SAC and SPA boundaries are considered in the NIS – impact pathways on the Qualifying Interests habitat and species or Special Conservation Interests take account of ex-situ effects via reductions in water quality or spread of invasive species; mortality; disturbance/ displacement; habitat loss, fragmentation, degradation, loss/ reduction in connectivity; and secondary effects on suitable habitat.
- Cited qualifying interest Freshwater Pearl Mussel population in the Lower River Shannon SAC is in the Cloon River, Co. Clare only to the north of the Shannon Estuary – grid connection located at a substantial separation distance and is not hydrologically connected.
- Freshwater Pearl Mussel population in the Lower River Suir SAC to which the conservation objective relates are in a watercourse that is not hydrologically connected with the UWF Grid Connection. There is an extant population 17km downstream and populations may exist at other locations and these have been screened in for further evaluation in the NIS.
- Appendices 3 & 4 are substantially the same, but Appendix 3 only comprises the Inventory & Classification of Watercourses at Crossing Locations and Appendix 4 includes this inventory, which follows a description of methodology for watercourse surveys and for classifications into Classes 1-4.

<u>Response to Paul & Edel Grace and Peter Sweetman</u>

- Applicant does not see the relevance of Daly v Kilronan Windfarm Ltd. [2017] 1EHC 308 to the current application which is seeking planning permission for the grid connection works for the already permitted windfarm. Windfarm grid connection the subject to Daly v Kilronan did not have planning permission before works commenced.
- Both EIAR and NIS include comprehensive evaluations of the cumulative impact of the UWF Grid Connection with other elements of the Whole UWF Project and with land use practices agriculture, forestry and turf cutting, and with other relevant projects including windfarms, quarries, town park, and the Killonan to Nenagh 110kV and Shannonbridge 220kV overhead lines. All other operating windfarms in the Irish State were included in the Climate chapter of the EIAR.

- Upperchurch Hen Harrier Scheme does not form part of the UWF grid Connection application – Scheme has been included in the evaluation of in-combination effects and no adverse effects on the integrity of the SPA will occur as a result of this Scheme.
- Potential for disturbance effects on species has been evaluated against the Conservation Objectives of the European Sites - Magnitude of any disturbance effects to species as a result of the UWF Grid Connection, either alone or in-combination, will be negligible, and the NIS concludes that there will be no adverse effects on the integrity of the Lower River Shannon SAC, Lower River Suir SAC and the Slievefelim to Slivermines Mountains SPA.
- Potential for deterioration of habitats has been evaluated against the Conservation Objectives of the European Sites - Magnitude of any habitat deterioration effects to species as a result of the UWF Grid Connection, either alone or in-combination, will be negligible, and the NIS concludes that there will be no adverse effects on the integrity of the Lower River Shannon SAC, Lower River Suir SAC, Clare Glen SAC and the Slievefelim to Slivermines Mountains SPA.
- Scope of Appropriate Assessment Reporting included European Sites within 15km of UWF Grid Connection or within 15km of any other element of the Whole UWF Project.

Transport Infrastructure Ireland

- No works will be required along the turbine component haul route, although some tree trimming, temporary laying of matting or removal of street furniture will be required at some locations – developer will consult with Councils and TII standards will be complied with.
- Axle weights associated with turbine component deliveries will not exceed the permissible axle weights under the Road Traffic Regulations.

Irish Water

- Surface water and groundwater sources for the Newport Regional Water Supply were both evaluated in the EIAR. Effects to main supply will not occur due to the

location of the surface water abstraction point upstream of the UWF Grid Connection.

- Effects to groundwater wells are not likely to occur due to the shallow nature of the trenching associated with the 110kV cables, the minimal use of concrete and the location of works on impermeable road surfaces.
- Data was received from Irish Water to clarify the location of Irish Water infrastructure along the route of the UWF Grid Connection – there are adequate distances, as outlined in the Irish Water Code of Practice, and as per ESB Networks minimum standard clearances to other services. No diversion of Irish Water infrastructure is likely to be required.

7.0 Policy Context

7.1. National Framework Plan, 2018

7.1.1. 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.

7.1.2. 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."*

7.1.3. 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."*

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

7.2.1. 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.

7.2.2. 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."*

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

7.3.1. 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."*

7.3.2. 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.

7.3.3. 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).

7.4. Climate Action Plan, 2019

7.4.1. This plan puts in place a decarbonisation pathway to 2030 consistent with reaching the EU target of net zero emissions by 2050. It builds on the measures set out in the National Mitigation Plan, Project Ireland 2020 and the draft National Energy and Climate Plan.

7.4.2. It is noted that electricity accounted for 19.3% of Ireland's greenhouse gas emission in 2017; however, 30.1% of electricity produced in 2017 was from renewable sources. The target is to reach 40% by 2020 but there is a very rapid projected growth in electricity demand. The Climate Action Plan therefore seeks to ensure that renewable rather than fossil fuel generation capacity is built to meet this demand. The aim is to have 70% of electricity generated from renewable sources by 2030. The Climate Action Plan acknowledges that increased levels of renewable generation will require very substantial new infrastructure, including wind and solar farms, grid reinforcement, storage development and interconnection.

7.5. National Adaption Framework, 2018

7.5.1. 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.

7.6. Natural Heritage Designations

7.6.1. The following designated sites are within 5km of the proposed wind farm and grid connection:

Site Name	Site Code	Distance (nearest point to grid connection)	Distance (nearest point to wind farm)
Slievefelim to Silvermines Mountains SPA	004165	Adjoining/ within	Small section overlapping with grid connection adjoining/ within
Anglesey Road SAC	002125	2.9km south-east	2.9km south-west
Clare Glen SAC	000930	1.75km south-west	17km west
Glenstal Wood SAC	001432	2.85km south-west	17.1km west
Keeper Hill SAC	001197	4.25km north	10.9km north-west
Lower River Shannon SAC	002165	Adjoining/ within	1.5km south-west
Lower River Suir SAC	002137	5.35km south	3km east
Grageen Fen and Bog NHA	002186	3km south	12.3km west
Mauherslieve Bog NHA	002385	2.8km north	4.7km west
Bleanbeg Bog NHA	002450	2.2km north	13km west
Bilboa and Gortnageragh River Valleys pNHA	001851	2.858km south-west	7.7km south-west
Clare Glen pNHA	000930	1.7km south-west	17km west
Derrygareen Heath pNHA	000931	100m north	15km west
Keeper Hill pNHA	001197	4.35km north	11km north-west
Glenstal Wood pNHA	001432	2.54km south-west	17km west

8.0 **Assessment**

8.1. 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.

9.0 **Planning Assessment**

9.1. 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)}. This decision was made on the 12th August 2014 prior to the O'Grianna and Others v. An Bord Pleanála IEHC 632 (2014) judgement, where it was determined that a connection to the national grid is an integral part of an overall windfarm development.

9.2. The current application to the Board is for a 110kV Upperchurch Windfarm (UWF) Grid Connection to connect the permitted windfarm to the national grid via the Killonan to Nenagh 110kV overhead line at Mountphilips, Newport, Co. Tipperary. This application follows a previous refusal of permission by the Board for a grid connection (ABP-301959-18) that would have taken a different route over land to the north of the current proposal, which continues mostly along the public road.

9.3. The Board is also deciding on a concurrent appeal (Ref: ABP-303634-19) for a proposal described as Upperchurch Windfarm (UWF) Related Works that includes internal windfarm cabling, realignment of consented windfarm roads, haul route works, a telecom relay pole and ancillary works. This proposal is for the purposes of regularising and enabling the consented Upperchurch Windfarm including internal windfarm cabling which prior to the O'Grianna judgement may have been considered exempted development. The consented Upperchurch Windfarm, UWF Related Works and the UWF Grid Connection form three elements of the Whole UWF Project that also includes UWF Replacement Forestry and UWF Other Activities (haul route activities, Upperchurch Windfarm Hen Harrier Scheme, monitoring activities and overhead line activities).

9.4. Arising from the O'Grianna judgement, the proposed UWF Grid Connection, the UWF Related Works and the other elements of the Whole UWF Project are assessed cumulatively within the EIA, along with any other relevant projects or activities. The Appropriate Assessment also considers whether the UWF Grid Connection, individually or in combination with other plans and projects, would adversely affect the integrity of any European site, in view of each relevant site's Conservation Objectives.

9.5. 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 to be addressed in this case are as follows:

- Validity, procedural and legal issues
- Other issues raised in submissions
- Policy context/ principle
- Environmental Impact Assessment
- Appropriate Assessment
- Overall Conclusion

9.6. **Validity, procedural and legal issues**

9.6.1. From the outset, it should be noted that matters relating specifically to the impact of the consented windfarm, such as noise, shadow flicker, visual impact of turbines, reduction of property values, etc. have been fully assessed and decided upon by the Board under permitted case PL22.243040. The merits of the proposed UWF Grid Connection and concurrent UWF Related Works appeal case must therefore be considered in their own right. Notwithstanding this, the cumulative assessment takes account of the permitted aspects of the windfarm and all other elements.

Project Splitting

9.6.2. A number of submissions on the planning application and appeal highlight that information relating to the impact of the full proposal on protected species would not have been available to the Board at the time permission for the windfarm was granted. Furthermore, it is considered that the splitting of the project impedes its proper assessment. Observers James & Tanya Embleton submit that the windfarm was granted without reference to the grid link and now needs to be properly reopened to make a full cumulative assessment of the Whole UWF Project. Observers Ned & Carmel Buckley consider that it is unclear if the cumulative impact assessment is carried out on the permitted windfarm or the windfarm as reimagined and refused by the Council (UWF Related Works).

9.6.3. In response to the allegations of project splitting, the applicant refers to judicial review cases subsequent to the O'Grianna judgement which confirmed that the law does not require planning permission for all integral parts of a large project to be obtained at the same time, or as part of a single application to one consenting authority. Within North Kerry Wind Turbine Awareness Group v An Bord Pleanála (2017) IEHC 126, it was held that *"there is no necessity that a grid connection must be included in the planning application for the purpose of seeking consent in order for an E.I.A. to be carried out; rather, the EIA requires information on the grid connection to enable a full EIA to be carried out and for the Board to assess the likely significant impact on the wind farm and grid connection as a whole."* In Alen-Buckley v An Bord Pleanála [2017] IEHC 541, the High Court stated: *"Insofar as the argument is advanced that the Developer was not entitled to lodge separate planning applications for the main development and the grid connection, it is clear that such an argument is unsustainable in the light of the dictum of Peart J. in O'Grianna and the stream of case law which has been generated since that decision. It will be recalled that in O'Grianna, Peart J. stated at para 27: "In that way, the connection to the national grid is fundamental to the entire project, and in principle at least, the cumulative effect of both must be assessed in order to comply with the Directive."*

9.6.4. As there is no requirement that planning permission must be obtained for all elements of the project at the same time, it therefore follows that individual and indeed cumulative assessments for different elements of an overall project may be carried out at different times. It may be the case that complete information relating to the impact of the finalised proposal is not fully available at the inception of the project or upon completion of its first part. Larger plans and projects in particular can develop and change over time and it may not necessarily be possible to predict the final make up at an early stage of a large project that is broken down into separate elements. What is important, in my opinion, is for the cumulative impact of an entire project as envisaged at the time of assessment to be carried out as accurately and robustly, and as up-to-date as possible. This includes an assessment of the passage of time pertaining to the surveys and analysis, and an update of baseline information between each of the project elements that are taking place over time.

9.6.5. Overall, I accept that whilst the current proposal may contain substantial information concerning grid connection, cable routes and associated works that were outside the

scope of the original application, I would nonetheless be satisfied that there is sufficient information on file for the Board to fully assess the cumulative impacts and in-combination effects of the UWF Grid Connection, the Whole UWF Project and any other relevant plans or projects.

Consent/ public participation/ community benefit

9.6.6. Observers Ned & Carmel Buckley and Edel & Paul Grace and Peter Sweetman have submitted that the application is invalid as it does not have the required landowner consent. Issues have also been raised by Observers Emer Ó'Siochrú & Toal Ó'Muire regarding public participation and the establishment of a community benefit fund.

9.6.7. The applicant has confirmed that letters of consent from private landowners and Tipperary County Council have been submitted with the application. Details of public notice of the application are also set out in the applicant's response to observations. I am satisfied that the applicant has the necessary legal interest to make the application and that participation of the public has been appropriately afforded.

9.6.8. Upperchurch Windfarm has been successful in the recently announced RESS1 auction and this will require the applicant to establish a community benefit fund prior to the commercial operation of the project. This would result in community benefit payments of €400,000 per annum to the local community.

Disclaimer

9.6.9. It has been submitted by Observers Grace & Sweetman and Buckley that a disclaimer attached to the Natura Impact Statement stating that no method of assessment can completely remove the possibility of obtaining partially imprecise or incomplete information means that the NIS does not comply with the Habitats Directive.

9.6.10. It has since been confirmed by the author of the NIS that "the UWF Grid Connection NIS provides precise information that is complete in nature. All data was collected using Best Practice methods. No limitations are identified in the main body of the (NIS) text. There is no information lacunae in the NIS document and as such the NIS complies with the requirements of the Habitats Directive."

9.6.11. Observers Emer Ó'Siochrú & Toal Ó'Muire refer to a number of judgements and submit that it is not possible for the Board to grant permission for this development in compliance with the Environmental Impact Assessment Directive and the Habitats Directive. The cases referred to are Case C-258/11, Peter Sweetman and Other v An Bord Pleanála; Case C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála; Case C-323/17, People Over Wind and Peter Sweetman v Coilte Teoranta; and Case C-461/17, Brian Holohan and Other v An Bord Pleanála.

9.6.12. Case C-258/11, Peter Sweetman and Other v An Bord Pleanála relates to the Galway Outer Bypass and the implications for a protected site of the plan or project and the criteria to be applied when assessing the likelihood that such a plan or project will adversely affect the integrity of the site concerned.

9.6.13. Case C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála concerns the fluctuation of an area providing for the needs of a protected species over time and whether or not a plan or project falls under Article 6(3) or 6(4) of the Habitats Directive.

9.6.14. Case C-323/17, People Over Wind and Peter Sweetman v Coilte Teoranta concluded that it is not appropriate at the screening stage to take account of mitigation intended to avoid or reduce the harmful effects of the plan or project on that site.

9.6.15. In Case C-461/17, Brian Holohan and Other v An Bord Pleanála, the decision of the Board to grant permission for the Kilkenny Northern Ring Road Extension was challenged. The CJEU handed down a judgement in this case on the interpretation of the Habitats Directive and EIA Directive.

9.6.16. In the context of the above cases, I consider that there is sufficient information on file for the Board to carry out an Appropriate Assessment and Environmental Impact Assessment of the proposed development under Sections 10 and 11 respectively of this report. I have reached a conclusion that the proposed development, individually or in combination with other plans and projects would not adversely affect the integrity of any European site, in view of the sites' Conservation Objectives. I am also satisfied that the EIAR provides information that expressly addresses the significant effects of the proposed development on all species identified and that the environmental impact of the chosen option and main alternatives has been properly

considered. Notwithstanding this, it is a matter for the Board to decide if the NIS contains adequate information that is sufficient to allow for appropriate assessment of the proposed development (see Section 11 below).

9.7. Other issues raised in submissions

9.7.1. A number of issues raised within observations are dealt with, both in a broad sense and specifically within the relevant sections of the EIA and Appropriate Assessment.

9.7.2. The impact of the proposed UWF Grid Connection, individually and in combination with other aspects of the Whole UWF Project, and with any other plans and projects on Hen Harrier is addressed in full detail under the Appropriate Assessment and within the Biodiversity section of the EIA.

9.7.3. Observers James & Tanya Embleton submit that surveys of Upperchurch Windfarm are now out of date and out of sync with more recent surveys at the other end of the site. Surveys were carried out from March 2015 to April 2017 with the primary objective of identifying all breeding and roosting sites in suitable habitat within a 2km radius of the proposed works. Flight Activity Surveys were also carried out in 2019 and these were used to identify important prey items for Hen Harrier. It is concluded that the overall usage of the development site by Hen Harrier is low and therefore the risk of displacement or collision is low, and that reduction in prey species will be of negligible magnitude. Mitigation measures include the limitation of construction works during the roosting season (Oct - Feb) within 1km of a roost to the period between one hour after sunrise to one hour before sunset. Works will only be carried out at the Mountphilips Substation site during the Hen Harrier breeding season and not along the grid connection through the SPA during this period.

9.7.4. Observers James & Tanya Embleton also pointed out the proposal will include the crossing of watercourses that feed into freshwater pearl mussel territory. Freshwater Pearl Mussel are a qualifying interest for both the Lower River Shannon SAC and the Lower River Suir SAC. It has been established in the Appropriate Assessment below that there are no pathways to Freshwater Pearl Mussel within the Lower River Shannon SAC and the nearest Freshwater Pearl Mussel population within the Lower River Suir SAC is c. 17km downstream.

9.7.5. **Irish Water** noted in a submission to the Board that the proposed development has the potential to impact an Irish Water Drinking Water Source at Newport Regional Water Supply abstraction point, as the proposed cable route is 350m from Newport WTP river intake point on Mulkear River. It is also highlighted that there are three wells for public water supply (GW1 – GW3) used to augment supply located in a compound adjacent to a local road in Castlewaller townland. The cable route passes along this road.

9.7.6. The applicant has since confirmed that clarification regarding the location of Irish Water infrastructure along the route of the UWF Grid Connection has been received from Irish Water and there are adequate separation distances, as per Irish Water's Code of Practice, and ESB Networks minimum standard clearances to other services. No diversion of Irish Water infrastructure is therefore likely to be required. It is also considered that effects to groundwater wells are not likely due to the shallow nature of the trenching associated with the 110kV cables, the minimal use of concrete and the location of works on impermeable road surface.

9.7.7. **Transport Infrastructure Ireland** notes that the proposed cable route will be located along regional and local roads but that haul route activities will occur along certain national roads. It is recommended that the applicant consults with the Council as road authority and that any details of works impacting on the national road agreed between the applicant and the road authority should be notified to TII. It is also stated that any temporary works to existing national road junctions to facilitate turbine delivery shall comply with standards outlined in TII publications and shall be subject to Road Safety Audit as appropriate.

9.7.8. Observer James & Tanya Embleton submit that the grid connection route follows an unstable road which suffers from subsidence and ongoing repair. In response to the issue of stability of the R503 Regional Route, the applicant submits that five locations of deeper peat close to the road were identified and a floating road trench was designed, which will improve the strength of the road at these sections. It is also noted that most of the road is stable within the construction works area, being predominantly of 'excavate and fill' construction and located on firm ground.

9.7.9. In general, I would be satisfied that the construction of the proposed development can proceed subject to the conditions recommended by the Council in relation to

roads. It should be noted that the applicant is seeking the removal of the Council's recommended Condition 7(i) which states that *"the proposed development shall be restricted to two work locations at any one time on the R503 Regional Road."* The applicant submits that this condition would pose difficulties in the context of a restriction set out in the biodiversity Project Design Measures on timing of construction works along the road, i.e. works along the road will only be carried out during September to February inclusive. The applicant is proposing the use of three construction works crews along the R503 at the same time, and another crew dedicated to construction works on local roads. I would be in agreement with the applicant that construction works must be maximised outside of the breeding season. I also accept that the volume of traffic on the R503 is not of an extent to be significantly disrupted by an additional works location during the construction period. Suitable traffic management plans will be put in place to control traffic safety and free flow.

9.7.10. A number of other issues were raised in observations relating to the heritage value and condition of certain bridges along the cable route; reinstatement of roads in Rear Cross village; impact on tourism and heath; and invasive species. These issues are addressed in more detail in the relevant section of the EIA below. Tipperary County Council has recommended a condition relating to the supervision of works at protected structures and a number of mitigation measures are proposed to protect cultural heritage sites. The applicant also confirms in response to the submission from Rear Cross Tidy Towns Committee that the road through Rear Cross will be properly reinstated and this will include liaison with the tidy towns committee during construction to ensure that the appearance of village is not diminished by cabling works.

9.8. Policy Context/ Development Principle

9.8.1. A detailed sectoral roadmap has been set out in the Climate Action Plan, 2019 that includes an aim to generate 70% of electricity from renewable sources 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 facilitate the construction of the consented Upperchurch Windfarm, and when the windfarm is operational, renewable energy will be exported

to the national grid via the proposed grid connection. The Whole UWF Project will see the generation of 150 million kWh of renewable energy per annum, thereby contributing 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 12GW of renewable energy capacity over the period 2021 to 2030.

9.8.2. 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.

9.8.3. At a regional level, the recently adopted 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."*

9.8.4. 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. 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. Notwithstanding this, the proposed UWF Grid Connection and UWF Related Works are enabling works for the already permitted windfarm development and should not therefore be considered *new* wind energy development for the purposes of assessing suitability within this area.

9.8.5. The visual impact of the proposed UWF Grid Connection is assessed in further detail under the relevant environmental factors of the EIA below. Again, it should be

emphasised that the principle of the wind turbines and their locations within the landscape are not under determination as part of this planning application. The principle of a windfarm has already been accepted and it follows that the principle of any development required to enable the permitted development should also be acceptable in principle subject to an assessment under any other relevant criteria, as covered below under the EIA and Appropriate Assessment.

9.8.6. Overall, I consider that the proposed UWF Grid Connection and the Whole UWF Windfarm is 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."*

10.0 Environmental Impact Assessment

10.1. Introduction

10.1.1. The proposed development itself comprising a 110kV electrical substation and underground cabling does not fall within a class of development set out in Schedule 5 of the Planning and Development Regulations, 2001 (as amended). 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."* The proposed UWF Grid Connection forms part of the Whole UWF Project, which also includes the permitted 22 no. turbine windfarm, the proposed UWF Related Works (currently under appeal), UWF Replacement Forestry and UWF Other Activities.

10.1.2. 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 UWF Grid Connection which

assesses the cumulative impact of the proposal will all other elements of the Whole UWF Project.

10.1.3. 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 on to the Board on 13th December 2019 and is therefore assessed under the provisions of the new Directive.

10.1.4. 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 and the applicant's response to same are set out at Section 6 of this report. The main issues raised specific to EIA can be summarised as follows:

- Impacts on biodiversity including ornithology, bats and otter;
- Impacts on soils and water bodies;
- Impacts on population and human health;
- Impacts on material assets (roads); and
- Cultural heritage and landscape impacts.

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

10.1.6. 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.

10.2. EIAR Content and Structure

10.2.1. The EIAR is presented in four volumes comprising the non-technical summary (Volume C1), the main report (Volume C2), figures (Volume C3) and appendices

(Volume C4). 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 no likely adverse impacts were identified in the EIAR. The only significant impact identified is the significant indirect positive effects to climate.

10.2.2. 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 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 any 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.

10.2.3. Overall, I am satisfied that the information provided 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.

10.3. Reasonable Alternatives

10.3.1. 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.

10.3.2. An overview of grid connection locations, grid connection technology (OHL v UGC), alternative designs and locations for Mountphilips Substation, alternative public road routes for the underground cable (UGC), and alternative processes for the project are provided in Chapter 4 of the EIAR. The consideration of alternatives also takes account of the Board's previous refusal for a cross country route to connect the permitted windfarm to the national grid. A "do nothing" alternative examines the effects of not proceeding with the proposed development and the secondary effects of Upperchurch Windfarm not being built. This would result in a significant lost opportunity to contribute to Ireland's action on climate change remediation. Upperchurch Windfarm would provide a carbon offset potential of 106,216 tonnes of greenhouse gasses every year that may otherwise be emitted by a fossil fuel plant.

10.3.3. Alternative nodes (locations) for connecting Upperchurch Windfarm to the national grid were examined and it was determined that there were no other technically feasible alternative connection points to Mountphilips along the Killonan to Nenagh 110kV line. There is not enough available electricity capacity at other 110kV stations (Nenagh, Thurles, Tipperary and Cauteen Stations) and the Killonan Station itself does not have the capacity without requiring major station works. The Killonan to Nenagh 110kV line has capacity to take the substantial amount of electricity which will be generated by the proposed windfarm and a new substation will increase transmission system security, increase the Killonan to Nenagh 110kV OHL stability and improve the system circuits control and protection.

10.3.4. It would be necessary for an overhead line (OHL) connection to be routed through open countryside due to technical requirements and this would place construction works within natural habitat and close to watercourses. An underground cable (UGC) along the public road would have slight to moderate impacts on road users for the duration of construction works but would minimise effects to natural habitat, animal species and watercourses. It is therefore considered to be a better alternative. It should also be noted that the previous refusal for the grid connection was through open countryside.

10.3.5. The three public road routes considered for the proposed 110kV UGC were the local road through Toor, the R503 through Newport and the R503 avoiding Newport. The Toor route is lightly trafficked and sparsely populated and it was considered that construction works along this route would have greater potential to disturb or

displace Hen Harrier. Higher volumes of traffic use the R503 and there are more road-fronting houses and side roads and therefore baseline conditions will not contrast as much with construction work conditions. It is also noted that the Lower River Shannon SAC is located in close proximity to the local road through Toor. The R503 route avoiding Newport is considered preferable to the route through Newport for obvious reasons of disruption and traffic delay, as well as the potential impacts on planned pavement works in Newport town.

10.3.6. Alternative processes devised to avoid, prevent or reduce environmental effects include the scheduling of construction works; sequencing of watercourse crossing works, earthworks, dewatering and excavation dewatering within 50m of a watercourse; and the design and security of lighting and restriction of construction works to daylight hours.

10.3.7. 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 route and the development of the design process are set out, together with the background for the chosen layout. 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).

10.4. Likely Significant Effects on the Environment

10.4.1. 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.

10.5. Population and Human Health

10.5.1. Chapters 6 and 7 of the EIAR describe the general characteristics of human activity and health status in the study area. The sensitive aspects identified in these chapters are the local economy, local residents and community and transient

residents. The local study area includes the electoral divisions surrounding the proposed development and the assessment is informed by Census 2016, feedback from consultations, development plans and other EIAR chapters. The Whole UWF Project study area includes a total of 23 no. electoral divisions. The EIAR evaluates the potential for the UWF Grid Connection and other elements of the Whole UWF Project to cause impacts to population as a result of spending and job demand. Human health is assessed in terms of the significant effects attributable to the proposal, building upon the conclusions of other relevant chapters of the EIAR.

10.5.2. The surrounding rural area is sparsely populated with the main land uses being agricultural grassland, commercial forestry plantations, public and private roads and isolated residences and farmsteads. Nearby settlements include Upperchurch, Kilcommon, Rear Cross and Newport. There are no dwellings in close proximity to the proposed Mountphilips substation site. The Slievefelim Way walking trail and the Ormond Way Cycle Route overlay the route of the proposed 110kV UGC and there is a scenic route along section of the R503 and R494. There are two high voltage (110kV and 220kV) overhead lines in the vicinity of Mountphilips.

10.5.3. Agriculture and forestry account for 60% of business premises and 8% are employed in agriculture, forestry and fishing in the local area (4% national average) in the Whole UWF study area. The population of the Whole UWF Project cumulative evaluation study area was 15,323 in 2016.

Characteristics of the Proposed Development

10.5.4. The proposed development forms part of an overall windfarm project that includes the consented windfarm of 22 no. turbines, proposed UWF Related Works and the subject development. The extent of works will be in proximity to a number of residential receptors and recreational and community uses.

10.5.5. The construction period is expected to take 12 to 18 months and up to 100 persons will be engaged in the construction of the UWF Grid Connection. Normal working hours will be 07:00 to 19:00 hours Monday to Friday and 08:00 to 16:30 hours on Saturdays.

Predicted Impact of the Proposed Development

10.5.6. The predicted impacts on each of the identified sensitive aspects (local economy, local residents and community and transient residents) arising from the UWF Grid Connection and cumulatively with other aspects of the Whole UWF Project are summarised as follows:

Local Economy

- C. 100 persons working directly on the UWF Grid Connection project.
- C. €900,000 will be paid to local landowners in the form of wayleave agreements and land purchases.
- C. €1.5 million will be spent regionally of stone and concrete and c. €500,000 induced spending on locally sourced goods and services will be created.
- Additional GVA generated (€2.9 million) equivalent to 1% of overall size of local economy in the study area in the year of construction.
- Cumulative impact of Whole UWF Project if constructed during the same period as Castlewaller Windfarm and Bunkamalta Windfarm is €7.35 to €11.35 million GVA (4-5% of value of local economy).
- Other likely impacts that could affect population are evaluated more directly in other topic chapters relating to human health, land, air, material assets (built services) and material assets (roads).
- Conclusion is that the UWF Grid Connection will not cause significant adverse impacts on population and effects will be positive.

Local Residents and Community

- Potential cross factor effects to human health reported from topic chapters relating to population, water, air, and material assets (road users).
- Positive individual and cumulative impacts from increased employment, with indirect and diffuse benefits at regional and local level.

Transient people

- Neutral human health impacts during construction mainly due to the temporary exposure to any impacts.

- Operational impacts will be neutral due to the transient nature of this sensitive aspect and on the basis that EMF levels will remain substantially below the guideline exposure levels to protect public health.
- Conclusion is that UWF Grid Connection will not cause significant adverse effects to human health.

Mitigation Measures

10.5.7. There are no project design mitigation measures specific to the local economy. Local employment and local sourcing will be carried out as a best practice measure. Project design environmental protection measures relevant to local residents and community include the following:

- PD04 – construction works carried out in daylight hours.
- PD06 – construction works will not be carried out within 150m of Rear Cross National School or Lackamore National School during school hours.
- PD07 – 110kV UGC construction works along local roads will not take place at the same time as haul route works along these roads.
- PD08 – confirmatory consultations with utility providers and confirmatory ground surveys will be carried out ahead of works.
- PD09 – consultations with Newport Regional Water Supply Office.
- PD10 – Use of flag-men on public roads subject to one-lane closures.
- PD11 – Construction works for 110kV UGC which are within 150m of local residences will not take place at the same time as either the UWF Related Works or Upperchurch Windfarm works where those works also occur within 350m.
- PD12 – Works along public road will be scheduled to minimise impacts on schools and local businesses.
- PD16 – No refuelling of plant or equipment within 100m of water supply wells.

Residual Impacts

10.5.8. Residual impacts will be neutral.

Conclusions on Population and Human Health

10.5.9. Overall, it is considered that there will be no significant cumulative adverse impacts on population and human health during the construction or operational phases of the proposed development. I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and measures within suitable conditions. There will be slight positive effects on local residential and community aspects, as well as the local economy from increased employment.

10.5.10. Observers Emer Ó'Siochrú & Toal Ó'Muire referred to the turbines breaching the guidelines for minimum distance to dwelllings; however, as noted in Section 9.6 above, matters relating specifically to the impact of the consented windfarm, such as noise, shadow flicker, visual impact of turbines, reduction of property values, etc. have been fully assessed and decided upon by the Board under permitted case PL22.243040.

10.6. Biodiversity

10.6.1. Chapters 8 of the EIAR sets out the methodology for evaluating effects on biodiversity that includes biodiversity receptors, fieldwork methodology, baseline characteristics, cumulative information, evaluation of impacts to each sensitive aspect and mitigation and residual impacts. The sensitive aspects identified in this chapter are European Sites, National Sites, aquatic habitat and species, terrestrial habitat, Hen Harrier, general bird species, bats, non-volant mammals, amphibians and reptiles and Marsh Fritillary. The Board is advised that an Appropriate Assessment is carried out in Section 11, which considers if the proposed UWF Grid Connection, individually or in combination with other plans and projects would adversely affect the integrity of any European site, in view of each relevant site's Conservation Objectives.

10.6.2. The grid connection will commence at the proposed Mountphilips substation on lower lying agricultural grasslands to the west of the Slievefelim to Silvermines uplands area. The route will follow paved public roads through the uplands before connecting to the permitted substation at Upperchurch Windfarm. Lands either side of the proposed UWF Grid Connection comprise typical roadside habitat such as

hedgerows, trees, earth banks, gardens and amenity grasslands. The wider uplands include agricultural and forestry lands. Lands at the location of Mountphilips substations comprise of agricultural grasslands.

10.6.3. Baseline information was sourced from consultations with various bodies including NPWS and IFI; ecological evaluation guidelines; desktop analysis; and fieldwork. Surveys included habitat surveys of all terrestrial habitat within 50m of work locations; aquatic ecology surveys/ fisheries surveys of all crossing locations; Hen Harrier surveys to identify breeding behaviour, active nests, availability of nesting and foraging habitat within 2km of each nest, habitat and prey item presence within 150m of construction works boundary, and winter roost presence within 3.6km; general birds surveys at Mountphilips substation; Kingfisher and Otter habitat suitability surveys within 300m of 26 no. crossing locations; building/ tree suitability surveys for breeding Barn Owls and Bats; non-volant animal surveys; and amphibian and reptile observations.

10.6.4. The proposed UWF Grid Connection passes through the boundary of the Slievefelim to Silvermines Mountains SPA for 8km and overlaps the boundary of the Lower River Shannon SAC at six locations. The Lower River Suir SAC, the Clare Glen SAC and NHAs/ pNHAs are located in the surrounding area. The Newport River, Clare River and Bilboa River are the main watercourses along the route and these are all in the River Shannon catchment. They contain good salmonid habitat, good/ high biological water quality and good ecological status.

Characteristics of the Proposed Development

10.6.5. The proposed Mountphilips substation will be situated in agricultural grasslands occupying an area of 10,290 sq.m. and surrounded by palisade fencing. Works at Mountphilips will also include widening of an existing farm entrance, a permanent access road to the compound, drainage systems, a construction compound, hedgerow/ tree removal and tree planting, excavation and storage of soils and reinstatement works.

10.6.6. Outside the Mountphilips substation site, works will be entirely along the public road to the turn off for the permitted Upperchurch Windfarm substation site. The construction works boundary will not extend into verges/ natural environment and a

minimal area of roadside vegetation may need to be cleared and reinstated at the location of any culvert replacement works.

10.6.7. Underground cabling will be laid over a distance of 30.5km in 1.25m deep and 0.6m wide trenches and over 65 no. watercourses outside Mountphilips substation. Works at the main river crossing along the route will be in the road pavement within the bridge structures. The majority of crossings are categorised as minor streams and land drains. There will be 42 no. joint bay points along the route.

10.6.8. The consented windfarm itself will involve the construction of 22 no. turbines, a substation and windfarm roads (11.6km). 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. Proposed UWF Related Works will include the laying of internal cabling, realignment of windfarm roads and haul route works.

Potential Impact of the Proposed Development

10.6.9. The potential impacts on each of the identified sensitive aspects arising from the UWF Grid Connection and cumulatively with other aspects of the Whole UWF Project are summarised as follows:

European Sites

- Findings of effects of UWF Grid Connection, alone or in combination with other projects, on European Sites are fully considered and evaluated in the Appropriate Assessment in Section 11 below.
- 29km of the 30.5km 110kV UGC is located within the Mulkear catchment of the Lower River Shannon SAC – located within boundary of this SAC at 6 points along public roadways.
- No part of UWF Grid Connection overlaps the Lower River Suir SAC (c.12km downstream) or the Clare Glen SAC (2.2 downstream).
- UWF Grid Connection passes through the boundary of the Slievefelim to Silvermines Mountains SPA for 8km along the R503.
- UWF Grid Connection was evaluated for cumulative effects with all other elements of the UWF Whole Project and with other projects and activities.

- In view of conservation objectives and rationale for designation of the European Sites under consideration, UWF Grid Connection, either alone or in-combination, will not result in any effects that will adversely affect the integrity of the Lower River Shannon SAC, the Lower River Suir SAC, the Clare Glen SAC or the Slieve Felim to Silvermines Mountains SPA, having regard to their respective conservation objectives.

NHA/ pNHA

- Bleanbeg Bog NHA, Grageen Fen and Bog NHA and Mauherslieve Bog NHA are within 15km of the UWF Grid Connection. UWF Grid Connection or any other element of the UWF Whole Project have no potential to cause impacts to any NHA or pNHA due to separation distances, no potential for impacts to features of interest and presence of protected sites upgradient of proposed works – no source pathway links for hydrological effects and no likelihood of indirect habitat effects to these NHAs.

Aquatic habitat & species

- Impact of development is evaluated in EIAR as slight to slight-moderate for decrease in instream aquatic habitat quality; slight to moderate for riparian habitat degradation; and slight for changes to flow regime, disturbance or displacement and spread of invasive species.
- Rationale for evaluation is generally as follows:
  - Instream works are only required at 3 no. locations which have all in some way been altered by existing land use (agriculture or public road infrastructure);
  - Works will only be undertaken during IFI specified period (July to Sept.);
  - Works will not be undertaken without isolation of flow within the watercourse and removal of fish;
  - All remaining watercourses will be crossed using existing structures (bridges or culverts) and majority have low/ no fisheries value;
  - Frequency of works is once for any culvert replacement and duration of impact limited to specific works period within or adjacent to aquatic habitat;

- Temporary duration and reversibility of any effects and the implementation of water quality mitigation measures;
- Implementation of invasive species management plan and adherence to best practice biosecurity protocols.

- Cumulative impact of Whole UWF Project evaluated in EIAR as imperceptible to moderate and no likely impact/ slight to no likely impact with other projects and activities in the area.

Terrestrial Habitats

- Within construction works area, public road and other built surfaces account for 82% of habitat concerned. Within 50m of construction works area, the dominant habitat types are improved agricultural grasslands (36%), improved built land (15%), wet grassland (13%) and a mosaic of built land and amenity grassland (10.5%). Remaining habitat made up of conifer plantation and scrub, and small amounts of other habitat.
- Habitats of international conservation importance at 4 locations where UGC passes through the boundary of the Lower River Shannon SAC. Habitat of national importance include the Newport River, Clare River, Bilboa River and upland/ eroding streams habitat hydraulically connected to the Lower River Shannon SAC.
- Due to location of 8km of the 110kV UGC within Slievefelim to Silvermines Mountains SPA, designated for Hen Harrier, a number of habitats along the route support the structure and function of the SPA (foraging habitat in open landscape including grassland, heath and bog).
- Almost all land use change at the Mountphilips substation site will occur on improved agricultural grassland which is evaluated as having lower value.
- No cumulative impact – Whole UWF Project is evaluated as not significant to moderate because of the net gain of tree planting and the Upperchurch Hen Harrier Scheme.

Hen Harrier:

Loss of suitable foraging habitat:

- Land cover change will only occur at Mountphilips Substation – loss of suitable foraging habitat not significant. Nearest nest is 4.6km from Mountphilips Substation and habitat is considered sub-optimal based on distance from nest.
- Impact of Whole UWF Project will be significant positive because Upperchurch Hen Harrier Scheme will contribute to overall net gain to Hen Harrier of an additional 38.8 Ha of actively managed foraging habitat proximal to the SPA. Cumulative impact with other projects will be neutral.

Disturbance/ displacement of foraging Hen Harrier during breeding season:

- Works during breeding season will only take place at Mountphilips Substation – no works will occur within 4.3km of any known nests during breeding season and large amounts of suitable habitat within the core foraging range (2km) of Hen Harrier nest identified.
- Other reasons for no significant disturbance/ displacement for foraging Hen Harrier during breeding season include:
  - The availability of suitable foraging habitat within the wider area, with 70% suitable habitat available within the SPA.
  - Hen Harrier likely to the habituated to road and farming based noise and visual intrusion – unlikely to affect any individual >150m from source.
- Cumulative impact of Whole UWF Project with other projects and activities in the area will be not significant to slight.

Disturbance/ displacement of foraging Hen Harrier <u>outside</u> breeding season:

- Evaluated as not significant because birds are already habituated to road-based noise and visual intrusion – also extent of suitable foraging habitat elsewhere.
- Effects will be momentary and unlikely to affect any individual >150m from source.
- Disturbance to birds at their night-time roost has been excluded due to distance between UWF Grid Connection works and identified roost sites.

Reduction in prey item species

- Reduction in prey item availability only relates to Mountphilips substation site – 0.05 ha of suitable foraging habitat will be lost which is negligible in the context of the separation distance to nearest Hen Harrier nest.
- Impact on Whole UWF Project will be positive on prey item species of the Upperchurch Windfarm Hen Harrier Scheme.

General bird species

- There will be negligible loss of suitable nesting habitat and extent of suitable foraging habitat to be lost (1.75 ha), is low in the context of the availability of suitable habitat in the surrounding area.
- Activities such as cable trenching will not contrast significantly from baseline activities such as road works or farming related works.
- Duration of any individual disturbance events will be brief and reversible once works finish, with birds expected to return.
- There will be benefit to bird diversity from planting of hedgerows, erection of nest boxes and reinstatement built into design.
- Impact of Whole UWF Project on general bird species will be imperceptible to slight positive.

Bats

- Destruction or disturbance of bat roosts in trees at Mountphilips substation – imperceptible because only 1 tree of moderate suitability is within the zone of effect. Mitigation measures will ensure that bats are not roosting in the tree at time of works.
- Destruction or disturbance of bat roosts in bridges – two bat roosts could be affected, both of which are of negligible importance. Mitigation measures include bridge surveys and the exclusion of bats, if required before works over bridge commences.
- Severance of commuting routes or feeding areas due to site clearance works – only small extent of hedgerow will be permanently lost and 700m of new hedgerow will more than compensate for the loss.

- Disturbance or displacement due to lighting – use of cowling will prevent light spill onto bat roosts or key commuting routes/ feeding areas.
- Cumulative effect with Whole UWF Project will be imperceptible to not significant because of the small extent of combined works that will affect bats.

Non-Volant Mammals:

- Limited evidence of breeding or resting sites for otter, badger, fox, deer, rat and squirrel, primarily due to placement of the majority of work locations within the public road.
- All mammals are sensitive to the direct effects from disturbance/ displacement from breeding and foraging as a result of habitat loss, construction noise and visual intrusion.
- Otter – disturbance/ displacement. Otter evidence in close proximity to 3 identified crossings; however, no holts or resting places occur in close proximity and works will take place during daylight hours and from the surface of the bridge only.
- Majority or works will take place on existing road and Otter will be habituated to heavy traffic and disturbance effects will be temporary.
- Suitable habitat loss recorded within 50m of substation for badger; however, no setts were recorded in this area. Badgers unlikely to forage along roads. Very slight contrast to baseline conditions for badgers due to brief duration of works and absence of significant habitat loss within the context of an average territory size of 80 ha.
- Disturbance/ displacement of badger imperceptible because of absence of setts within 50m; temporary duration of works; completion of works in the day and their confinement to the public road; and effect unlikely to cause noticeable change to the character of the environment.
- Cumulative impact of Whole UWF Project will range from slight to not significant due to absence of activity in the cumulative area and protection measures built into the design of the projects.

Amphibians & Reptiles:

- Suitable habitat exists within the study area for Smooth Newt, Common Frog and Common Lizard – suitable habitat degradation considered to be unlikely.
- Extent of reduction of foraging and breeding habitat is considered negligible in the context of available habitat in the surrounding area.
- Disturbance/ displacement considered neutral because of spatial extent, limited frequency and brief duration of works – identified suitable habitat does not overlap construction works areas or activity locations.
- No potential for cumulative impacts because impacts from any individual element will be neutral.

Marsh Fritillary

- No suitable habitat recorded at Mountphilips substation site. Outside substation site, 110kV UGC is located entirely on paved surface which is not suitable for Marsh Fritillary.
- Three colonies recorded, two c. 1.2km north of the 110kV UGC and one c. 1.1km south-east. No likely impact because no Marsh Fritillary within 50m of the overlap areas with other elements of the Whole UWF Project.

Mitigation Measures

10.6.10. A total 56 project design measures (mitigation measures) are set out in the EIAR to avoid, prevent or reduce negative impacts on biodiversity in the receiving environment. These measures are included within the EIAR Biodiversity Chapter after each sensitive aspect.

10.6.11. There are also seven Best Practice Measures that have been developed specifically to protect surface water quality. Water quality and drainage will also be protected through a Surface Water Management Plan. Other bespoke plans that have been prepared for mitigation purposes include an Invasive Species Management Plan, Traffic Management Plan, Waste Management Plan and Environmental Emergency Response Procedures that will be implemented through an Environmental Management Plan during construction. This will be supervised and audited by a full time Environmental Clerk of Works.

Residual Impacts

10.6.12. No significant adverse impacts.

Conclusions on Biodiversity

10.6.13. Impact on ten different sensitive biodiversity aspects arising from the proposed UWF Grid Connection works, 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 in Section 11 of this report. Fieldwork surveys and studies included Hen Harrier vantage point surveys 2016, 2017, 2018 and 2019, Hen Harrier habitat suitability mapping (May 2019), breeding bird surveys (April 2019), Kingfisher surveys (January to May 2019), Barn Owl Surveys (February 2019), habitat surveys (Jan. 2019 and May 2019), classification of ecological value of watercourses (Jan. 2019 and May 2019), survey of potential bat roosts (Jan. 2019 and May 2019), bat activity surveys (June-August 2016 and Sept.-Oct. 2016), and non-volant animal surveys (2016, 2017 and 2019). These surveys are appropriate having regard to the biodiversity of the area and adequate in terms of their content, duration and coverage. Appendix 8 of the EIAR provides an outline of the detailed biodiversity data and supplementary information.

10.6.14. Upperchurch Windfarm and the UWF Related Works are mainly located within the catchment of the River Suir SAC and the UWF Grid Connection is mainly within the catchment of the River Shannon SAC. The proposed UWF Grid Connection passes through the boundary of the Slievefelim to Silvermines Mountains SPA for 8km and overlaps the boundary of the Lower River Shannon SAC at six locations. The Lower River Suir SAC, the Clare Glen SAC and NHAs/ pNHAs are located in the surrounding area.

10.6.15. The single special conservation interest of the Slievefelim to Silvermines Mountains SPA is the Hen Harrier. Findings of effects of UWF Grid Connection, alone or in combinations with other projects, on European Sites are fully considered and evaluated in the Appropriate Assessment in Section 11 below which concludes that the proposal will not result in any effects that will adversely affect the integrity of the Lower River Shannon SAC, the Lower River Suir SAC, the Clare Glen SAC or the Slieve Felim to Silvermines Mountains SPA, having regard to their respective

conservation objectives. It is also concluded in the EIAR that there are no pathway links for hydrological effects and no likelihood of indirect habitat effects to any NHA.

10.6.16. General birds in the area are typical of the hill farming land use and include Meadow Pipit, which was recorded in surveys. Suitable nesting habitat and the extent of suitable foraging habitat to be lost (1.75 ha), is low in the context of the availability of suitable habitat for general birds in the surrounding area. There will be benefit to bird diversity from planting of hedgerows, erection of nest boxes and reinstatement built into design.

10.6.17. Two bats roosts in bridges could be affected by the UWF Grid Connection works. Both locations are day roosts/ satellite roosts for single soprano pipistrelles which are considered to be of negligible importance. Project design measures incorporated into the development includes pre-construction surveys of bridges, exclusion procedures and provision of alternative roosting opportunities under derogation from the NPWS.

10.6.18. There is limited evidence of breeding or resting sites for otter, badger, fox, deer, rat and squirrel, primarily due to placement of the majority of work locations within the public road. Evidence of otter was found in close proximity to 3 identified crossings; however, no holts or resting places occur and works will take place during daylight hours and from the surface of the bridge only. Suitable habitat loss was recorded within 50m of substation for badger; however, no setts were recorded in this area.

10.6.19. The overall impact of the proposal on certain aspects of biodiversity, such as the removal of habitat, is unavoidable. There will be slight to moderate impacts on aquatic habitat and species from the UWF Grid Connection. Impacts on Hen Harrier will be not significant/ imperceptible and slight positive in terms of habitat enhancement for general birds. All other impacts on environmental aspects are evaluated as being not significant, neutral or imperceptible.

10.6.20. With respect to the proposed UWF Grid Connection in combination with other elements of the Whole UWF Project, cumulative impacts will range from imperceptible to moderate for aquatic habitat quality; moderate positive for terrestrial habitat (high nature value trees); significant/ moderate and positive for Hen Harrier in terms of foraging habitat and prey species; and slight positive in terms of habitat enhancements for general birds;

10.6.21. Measures to avoid, prevent or reduce negative effects on biodiversity include confirmatory surveys and control of construction works close to breeding/ resting places; carrying out of instream works at 'Class 1' and 'Class 2' watercourses during July, August and September; reinstatement of banks and channels; construction works to take place during daylight hours; cowling of light fittings away from trees hedgerow and buildings; felling of trees with suitable bat roost during period from mid-August to early November; erection of bat crossing structures; reinstatement of construction works areas; and storage of fuels, oils, chemicals and waste in a designated area. An Environmental Management Plan has been developed for the UWF Related Works and this includes a Surface Water Management Plan and an Invasive Species Management Plan.

Board's previous decision

10.6.22. It was recognised in the Board's previous decision regarding the proposal to construct a cross-country grid connection through the SPA to the north of the R503 that there would have been impacts to Hen Harrier arising from a reduction or loss of suitable foraging habitat and disturbance resulting from works within and close to sensitive roosting and breeding areas. The net permanent loss of 3.14 hectares was considered to be moderate (negative) and the Board was not satisfied that adequate mitigation measures had been set out in the EIAR to address this issue.

10.6.23. The Board also decided that the (then) selected route option would result in a significant intervention in the natural environment when lesser damaging alternatives are available that could avoid negative impacts on the environment with regard to biodiversity. The Board was not satisfied that sufficient consideration had been provided regarding the routing of the cable in the local road network or consideration of alternative grid connection technologies such as overhead line alternatives.

10.6.24. Observers Emer Ó'Siochrú & Toal Ó'Muire consider that the current proposal does not differ in a substantial way from the earlier submission. Observers James & Tanya Embleton submit that the route of the grid connection is largely within the SPA and should be treated as part of the SPA. Observer Grace and Sweetman are also of the view that the proposal is very similar to the previously refused application and its relocation from original planned route across country through the SPA onto the road through the SPA does not make it any more acceptable. Notwithstanding, the

current proposal addresses the Board's previous concerns by placing the majority of the 110kV UWF Grid Connection underground within the public road. The assessment above on biodiversity and the Appropriate Assessment set out in Section 11 illustrate that this proposal is satisfactory in terms of impact on the natural environment.

10.6.25. 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. I am satisfied that with proper implementation of project design measures and best practice measures, together with implementation of environmental commitments under the Environmental Management Plan, 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 in 2013 and 2014.

10.7. Land, Soil, Water, Air and Climate

10.7.1. This assessment deals separately with the above environmental factors as they appear in the EIAR. Chapter 9 addresses agricultural and forestry land and Chapter 10 deals with soils under two sensitive aspects, i.e. local soils, subsoils and bedrock, and the Lower River Shannon SAC. Local surface water bodies, local groundwater bodies, local wells and springs, Lower River Shannon SAC, Lower River Suir SAC and local water dependents habitats comprise the sensitive aspects that are assessed under Chapter 11: Water. Air and Climate are addressed under Chapters 12 and 13 respectively.

10.7.2. The UWF Grid Connection and UWF Related Works at the location of Upperchurch Windfarm are situated in a rural area within the wider Slievefelim to Silvermines upland area. The dominant land uses are agriculture and forestry. Soils in the area comprise mainly of mineral or peaty topsoil over glacial tills and the underlying bedrock consists mainly of volcanic meta-sediments.

10.7.3. The UWF Grid Connection is mostly located within the River Shannon catchment, with a small section to the east located within the River Suir catchment. The

Mountphilips substation site and majority of the 110kV UGC is within the Slievefelim groundwater body and the far eastern section is in the Templemore A groundwater body. Air quality in the area is considered good and there are no major existing noise sources. In terms of climate, Ireland exceeded its EU 2020 emissions target in 2016.

Characteristics of the Proposed Development

10.7.4. UWF Grid Connection works will take place from the new substation at Mountphilips to the consented substation at Upperchurch across a number of fields and along the public road over a distance of 28.9km. The works will require excavation of trenches, installation of ducting and backfilling and reinstatement of trenches. Approximately 2 hectares of land will be permanently changed in use for the UWF Grid Connection.

10.7.5. The Whole UWF Project will include 63 no. watercourse crossings. Permanent watercourse culverts will be sized to cope with a minimum 100 year flood event and drainage systems will be installed along new hard surface areas. Existing roadside drainage will be piped to maintain flow where necessary.

10.7.6. The UWF Grid Connection will require the importation of 1,290 loads of concrete, 1,320 loads of aggregate and 210 loads of surface dressing. Excavated material (23,380 m^3) will be removed to a licenced facility. This element of the project will also require excavation of 4,060 m^3 of topsoil, 1,240 m^3 of subsoil and spoil from road excavations. Approximately 5,000 m^3 of excavated material will be permanently stored around Mountphilips Substation and along the permanent access road.

10.7.7. Other elements of the Whole UWF Project include the consented windfarm of 22 no. turbines, substation, 11.6km of windfarm roads and ancillary works including drainage, construction compounds, borrow pits and storage and reinstatement of soils. The windfarm will occupy 6.4 hectares of land when operational. UWF Replacement Forestry will see the afforestation of 6 hectares of agricultural land at the townland of Foilnaman and UWF Other Works will include haul route activities, Upperchurch Hen Harrier Scheme and monitoring activities.

10.7.8. When completed and operational, the Upperchurch Windfarm will produce 150 million kWh of renewable energy.

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

10.7.9. The predicted impacts on land are summarised as follows:

- Construction works are located on 4.8 hectares of agricultural land spread over two landholdings at the Mountphilips substation site – livestock farming, dairying and beef cattle rearing are the main activities carried out on lands adjacent the route of the 110kV UGC
- Forestry land comprises commercial forestry plantations within the upland area – 110kV UGC will be installed through a forestry landholding but no works will be carried out off this road. No impact will occur to forestry land.
- Agricultural lands at Mountphilips Substation site will be fenced off and unavailable for farming during construction and early operational stage until vegetation has re-established – imperceptible impact due to moderate scale of agricultural land subject to works, the availability of agricultural lands in the surrounding area and the small extent of permanent effects.
- No interaction of agricultural landholdings between UWF Grid Connection and Upperchurch Windfarm/ UWF Related Works site – no cumulative impact.

Mitigation Measures for Land

- ***Agriculture –*** Project design environmental protection measures PD05 – construction traffic at Mountphilips site will be restricted to construction works area and tracking across adjacent ground will not be permitted. Speed limit of 25 kph will be implemented.
- Outside Mountphilips substation site, all construction will be restricted to the paved road or built surfaces. Speed limit of 50 kph along local roads for all delivery and construction traffic will be implemented.
- Design of new access road at Mountphilips includes gates to provide access across the road to agricultural lands either side.

Residual Impacts for Land

10.7.10. No significant residual impacts.

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

10.7.11. The predicted impacts on soils are summarised as follows:

- Soils in the study area comprise mainly of poorly draining mineral or peaty topsoil over glacial tills, sandstone tills with bedrock close to the surface along much of the R503 and at the Mountphilips substation site. There are some blanket peat soils adjacent the central part of the 110kV UGC. Geotextile material will be used in any sections of trench where competent ground is not encountered.

Local soils, subsoils and bedrock

- Soils and geology can be sensitive to processes such as excavation and relocation, erosion, compaction, and contamination.
- Impact on soils evaluated as imperceptible for compaction, erosion and contamination by oils or cements and slight for excavation and relocation – soil and geology at Mountphilips substation site are abundant in the area and of low to medium importance.
- Excavations required for the 110kV UGC will be spread out over a large geographical area and will be relatively shallow.
- Mountphilips substation site will be backfilled, and soil surrounding new permanent hardcore area will be fully reinstated and landscaped immediately after works.
- Environmental protection measures designed into project to prevent compaction, erosion and contamination of soils – no batching of cement on site and only precast concrete structures will be used at joint bays and watercourse crossings.
- Where UWF Grid Connection interacts with other elements of the Whole UWF Project, the cumulative compaction, erosion or contamination by fuels/ oils will be imperceptible. Slight cumulative excavation/ relocation impact due to large volumes of excavations required for Whole UWF Project and slight to moderate cumulative impacts in relation to contamination by cement reflecting the volume of concrete required for permitted turbine foundations.

Lower River Shannon SAC

- Soils and geology are not qualifying features of SAC (largely water-based aquatic habitats/ species).
- No excavation of riverbed or banks within the boundary of the SAC – all works within SAC will take place within road pavements or over existing bridge structures thus providing protective cover to underlying subsoils.
- Use of wet cement will be limited to placing very small amounts of cement mix in cable trenches – trenches within SAC will be lined with impermeable material.
- No potential cumulative effects with other elements of the Whole UWF Project because only UWF Grid Connection overlaps the boundary of the Lower River Shannon SAC.

Mitigation Measures

- Project design environmental protection measures PD05, PD17, PD21, PD34, PD36 to PD40 and PD42 to PD44 relating to construction traffic, welfare facilities, storage berms, culvert replacement, trench lining, storage of overburden, prevention of instream works within SAC, completion of works within SAC during dry weather, refuelling of plant, fuel storage and parking of plant.
- Best practice measures GC-BPM-05, GC-BPM-06, and GC-BPM-07 for protection of surface and groundwater quality.

Residual Impacts

10.7.12. No significant residual impacts.

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

10.7.13. The predicted impacts on water are summarised as follows:

- Replacement of existing culverts may be required at up to 13 no. locations along the public road – most are drains crossing under the regional road.
- 3 no. larger watercourse crossings on the public road of note will occur over the Newport River, Clare River and Bilboa River.
- No instances of historical or recurring flooding identified along proposed development route. PFRA mapping indicates that there are sections of the 110kV UGC located in fluvial flood zone A (100 year flood zone) – no potential flood risk

as a result of the proposed development as the majority of works are underground along the public road and footprint of overground permanent infrastructure is minimal and outside mapped flooding areas (Mountphilips Substation).

- Hydraulic capacity of any culverts to be replaced will be sized to cope with minimum 100-year flood.

Local surface water bodies

- Impact evaluated as imperceptible as vast majority of watercourse crossing points are existing culverts along the public road and works will be distributed between 4 sub-catchments; majority of watercourses intercepted by works area are drains or marginal headwater watercourses.
- Only small volumes of fuels/ oils will be on site at any one time and pre-cast structures only will be used at joint bays and culverts, designed to cope with 100 year flood event.
- Cumulative impacts range from imperceptible to slight mainly due to the majority of UWF Grid Connection works taking place in the Shannon catchment and most of the Upperchurch Windfarm/ UWF Related Works taking place in the Suir catchment. Cumulative impacts with other projects will be slight adverse, in part due to the size of the surface water catchment area and the transient nature of the UWF Grid Connection works.

Groundwater Bodies

- Evaluated as imperceptible because use of fuel, oils and chemicals will be negligible and storage of same will be controlled by virtue of project design. Relatively small amounts of cement are required.
- Effects on groundwater levels or flows not likely to occur due to shallow nature of substation excavations and cable trench joint bays.
- Cumulative impacts also imperceptible due to shallow nature of excavations, very small volumes of cementious material for UWF Related Works and implementation of concrete controls as part of Upperchurch Windfarm Works.

Local Wells & Springs

- Imperceptible impact due to location of construction works on paved roads and the small number of local wells and springs, with water supply mainly through public mains.

Lower River Shannon SAC

- Imperceptible impact because working footprint is spread out over a large geographical area within the Mulkear catchment and all excavated material will be removed to licenced waste facilities.
- Effectiveness of drains and marginal headwater watercourses acting as surface water flow path to downstream Lower River Shannon SAC is limited.
- Cumulative impacts with other elements will be imperceptible due to the location of the majority of UWF Grid Connection works within the Shannon catchment and most of Upperchurch Windfarm/ UWF Related works within the Suir catchment.
- Cumulative impacts with other projects will be imperceptible due to the large scale of the Mulkear catchment and the transient nature of the UWF Grid Connection works taking place mainly of public roads.

Lower River Suir SAC

- 110kV UGC will cross 5 watercourses at existing culverts along the paved road and 4 out of 5 watercourses are drains with no fisheries value. 1 no. drain along the public road may potentially require replacement.
- Imperceptible impact due to small scale of works within Suir catchment and large downstream distance to SAC.
- Cumulative impacts with other elements imperceptible due to the location of works within different catchments and the separation distance between works and the SAC.

Local water dependent habitats

- No likely impacts due to large size of the Mulkear catchment area and the transient nature of the UWF Grid Connection works which will predominantly take place on public roads.

Mitigation measures

10.7.14. There are a number of project design measures relevant to the protection of water that are intended to prevent sediment release and contamination of surface and groundwater. These include measures such as silt fencing; works in SAC taking place in dry weather; no chute wash out permitted within boundary of SAC; no discharge of pumped water into any watercourse or drain; and supervision of works within the boundary of the SAC by a member of CIEEM and the Institute of Fisheries Management.

10.7.15. A Surface Water Management Plan will be implemented through the Environmental Management Plan for the UWF Grid Connection during construction and this will protect water quality and the existing drainage regime.

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

10.7.16. The predicted impacts on air (air quality, ambient noise and vibration) are summarised as follows:

Local residents and community

- There are 391 no. residences and 19 no. public places and facilities within the study area for construction works (350m). Within construction area for operational phase (50m from main transport routes), there are 312 no. residences and 33 no. public spaces and facilities. Study area for operational noise is 400m from Mountphilips Substation (6 no. residences). There are no residences within 100m of Mountphilips substation site (study area for EMF).
- Dust from construction works vehicles evaluated as slight because background levels of pollution are very low – works are temporary and impact reversible.
- Noise from construction works vehicles evaluated as moderate as NRA threshold levels likely to be exceeded at some locations – only small number of receptors will be impacted at any one time due to progressive nature of works; the relatively short exposure during normal working hours; the temporary duration of potential exceedances of guideline limits; the reversibility of effects; and the carrying out of works during daytime hours.
- Noise during operation of Mountphilips substation – no impact due to separation distance of nearest dwelling (385m).

- Increase in ambient EMF levels during operation of substation and 110kV UGC – no residents or community facilities within 100m of Mountphilips substation. Some increase in magnetic field levels at 317 no. local residences and 17 no. community facilities within 100m of 110kV UGC. Increases remain substantially below ICNIRP guideline limits. No increase in electric fields due to complete screening by both the metallic sheath surrounding the cables and by the concrete and backfill materials above the cables.
- Cumulative impacts will be slight (construction dust) to moderate (construction noise).

Climate

- UWF Grid Connection will cause positive indirect impacts through enabling the supply of electricity to the National Grid that is generated from renewable sources.
- Increased deployment of renewable energy electricity generation avoids CO_2 emissions from fossil fuel generated electricity and contributes towards meeting Ireland's climate targets.
- Indirect significant positive impact through generation of enough renewable energy per annum to supply 52,381 houses (40% of houses in Counties Tipperary and Limerick.
- Cumulative impact of Upperchurch Windfarm in addition to all other operational windfarms in the Irish State will be a significant positive impact.

<u>Mitigation Measures</u>

- ***Air -*** Project design environmental protection measures PD04 to PD07 relating to construction works in daylight and school hours; restriction of construction traffic; and for UWF Related Works haul route works and UWF Grid Connection works along local roads not taking place at the same time.
- Best Practice Measures GC-BPM-08 and GC-BPM-10 to minimise dust emissions from site activities and measuring operational EMF emissions.
- ***Climate –*** GC-BPM-1: Measuring operational electricity production

Residual Impacts

10.7.17. No residual impacts.

Conclusions on Land, Soil, Water, Air and Climate

10.7.18. The main potential effects to land relate to the temporary and permanent loss of the use of agricultural lands at the location of Mountphilips Substation. However, the extent of lands used for the subject works will be very small in the context of the size of agricultural holdings and cumulatively there will be no interaction of agricultural landholdings between UWF Grid Connection and Upperchurch Windfarm/ UWF Related Works site. Impacts will be reversible upon completion of works and the extent of permanent effects will be small.

10.7.19. Soils in the study area comprise mainly of poorly draining mineral or peaty topsoil over glacial tills, and sandstone tills with bedrock close to the surface along much of the R503 and at the Mountphilips substation site. There are some blanket peat soils adjacent the central part of the 110kV UGC. The cumulative impact of the UWF Grid Connection with all other elements of the Whole UWF Project is evaluated as slight to moderate in terms of excavation and relocation of soils, subsoils and bedrock, and slight in relation to contamination from cement based compounds. All excavations will be fully reinstated and landscaped immediately after completion of works and geotextile material will be used in any sections of trench where competent ground is not encountered. Other mitigation measures are set out for storage of overburden, handling of fuel and cement, and works within the SAC. I would be satisfied that with full implementation of mitigation and best practice measures, the Whole UWF Project will not give rise to significant cumulative impacts on soils and there will be an absence of residual impacts.

10.7.20. The UWF Grid Connection is mainly within the Shannon catchment with a small area to the east within the Suir catchment. Upperchurch Windfarm/ UWF Related Works are mostly located in the River Suir catchment, with a small area to the west within the River Shannon Catchment. The Mountphilips substation site and the majority of the 110kV UGC is within the Slievefelim groundwater body and the far eastern section is in the Templemore A groundwater body.

10.7.21. Cumulative impacts to local surface water bodies were evaluated as being slight in relation to surface water quality impacts. Slight cumulative impacts were also evaluated in terms of impacts to local water dependent habitats. Observers James and Tanya Embleton are concerned that the proposal could result in the disturbance of silt and sediments and leaching pollutants within watercourses. The majority of in-stream works in the Whole UWF Project works area are within drains or marginal watercourses and there is little potential for pathways to the Lower Shannon SAC to occur. Most of the watercourse crossings along the UWF Grid Connection are already culverted and local surface water quality effects will be localised.

10.7.22. Effects on groundwater levels or flows are not likely to occur due to shallow nature of substation excavations and cable trench joint bays. Cumulative impacts on groundwater are also considered imperceptible due to controls on the use of fuels and cementious material. There will be an imperceptible impact on local wells and springs due to the location of construction works on paved roads and the fact that water supply is mainly through public mains.

10.7.23. Project Design Measures and detailed best practice measures such as the requirement that works will be in compliance with IFI guidance, implementation of a Sediment and Erosion Control Plan and other drainage measures, and measures relating to the handling and storage of fuels, oils, chemicals and overburden will ensure that there will be no significant effects on water. An Environmental Management Plan that includes a Surface Water Management Plan will also provide a framework for water quality protection. It can therefore be concluded that there will be no significant adverse effects to water occurring as a result of the UWF Gird Connection and cumulatively, the Whole UWF Project.

10.7.24. The EIAR assesses the impact of the project on air as it relates to air quality, ambient noise and vibration and electromagnetic fields. The proposed windfarm and grid connection are located in a sparsely populated rural area. Air quality in this upland area is good and there are no significant sources of noise and vibration.

10.7.25. There may be some impacts in terms of air quality, dust, noise, vibration, etc. on the local residents and the community, and on transient people during the construction phase of the Whole UWF Project. However, these impacts will be short term and localised. Moreover, there is a low number of dwellings in the vicinity of works and

the construction phase will be temporary, and impacts will be reversible. Works will also be carried out during daylight hours. With respect to electromagnetic fields, there is very low to low cumulative level, and new levels will remain substantially under the EU EMF Limits.

10.7.26. Appropriate measures are included in the EIAR to mitigate against air quality, noise, vibration and EMF impacts to an extent that no residual impacts on air quality will occur. Noise emissions from substations during the operational phase of the project will be imperceptible due to the distance to the nearest sensitive receptors.

10.7.27. Ireland has signed up to a number of climate agreements which aim to reduce greenhouse gas emissions. The cumulative effects of the Whole UWF Project will result in positive effects on climate due to the production of renewable wind energy and a reduction in the use of fossil fuels. A significant and positive cumulative impact on climate will occur when Upperchurch Windfarm is considered with other operating and proposed windfarms in Ireland.

10.7.28. Observers James & Tanya Embleton submitted concerns regarding the possible use of hexafluoride, a greenhouse gas, within the substation or grid link and. In response the applicant confirmed that Sulphur Hexafluoride (SF6) will not be required for the underground cable and a very small amount is required for arc suspension within the circuit breakers at the substations.

10.7.29. Overall, I consider that the impacts on land, soil, water, air and climate would be avoided, managed and/ or mitigated by the design and measures that form part of the UWF Grid Connection project. Taken with other elements of the Whole UWF project, and with other projects or activities, the cumulative effects of the proposal are not likely to be significant to an extent that might warrant a refusal of the proposed development.

10.8. Material Assets

10.8.1. Material assets are addressed under Chapters 14 and 15 of the EIAR. The sensitive aspects included in Chapter 14: Material Assets (Built Services) are local residents and the community, and the electricity transmission system. Chapter 15: Material Assets (Roads) contains sensitive aspects on public roads and road users.

10.8.2. UWF Grid Connection includes the provision of a new substation at Mountphilips connecting into the Killonan – Nenagh 110kV overhead line. This line originates in the Killonan 220kV Station, which is the main bulk supply point for the Mid-West region.

10.8.3. The 110kV UGC will be mostly laid underground along the R503, with smaller sections along local roads. All roads are lightly trafficked in general and no vehicle weight restrictions are in place.

10.8.4. A GPS survey of all existing Irish Water/ Eir/ ESB network services was carried out within 20m of the UWF Grid Connection works area. Irish Water Mains are present along the R503 and along local roads to Irish Water wells.

Characteristics of the Proposed Development

10.8.5. The Whole UWF Project involves the connection of a consented 22 turbine windfarm to the national grid. This includes the UWF Grid Connection over a distance of 30.5km to a proposed substation on the Killonan – Nenagh 110kV overhead line.

10.8.6. 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.

10.8.7. The 110kV UGC will be installed in trenches (1.25m deep and 0.6m wide), and ducts will be laid on a bedding sand and surrounded by concrete and steel protective plates if required. Manhole covers and marker plates/ posts will be the only surface expression along the route. Traffic will be managed along the public road with one lane closures, and narrower local roads may need to be closed for between 1-4 weeks.

10.8.8. A buried structure survey established that there are 63 no. watercourse crossings along the public road, all of which were in good condition. Two bridges do not have sufficient road depth to accommodate cable ducting and therefore the cable will cross via horizontal drilling under the watercourse. At Rockvale Bridge, Tooreenbrien Bridge and Anglesey Bridge the existing road and parapet wall heights will need to be increased to accommodate the 110kV UGC. The use of floating road

trench design will be required at any sections where competent ground is not encountered.

Predicted Impact of the Proposed Development

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

- During excavation for cable trenches and joint bays, existing water pipes could be damaged and supply interrupted – evaluated as neutral due to implementation of project design measures such as confirmatory consultations with Irish Water, Eir and ESB; review of infrastructure mapping; confirmatory ground surveys; hand digging within 500mm of pipes; banksman accompanying each excavator; and maintenance of close contact with Newport Regional Supply Office by Environmental Clerk of Works.
- Cumulative effects likely to be neutral due to project design measures including timing of works so that they do not coincide with other elements of the Whole UWF Project in certain areas.
- Any interruption to power supplies will be neutral and no potential for cumulative impacts due to the planning of supply outages on the system.
- Other projects will not cause cumulative impacts as these projects are not expected to involve the construction of new substation assets on this overhead line.

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

- Existing masonry box culvert may need to be replaced at 13 culverts (12 no. under R503).
- Works to road verges and boundaries will only occur at Mountphilips Substation site entrance. All works outside Mountphilips substation site will take place within road pavements/ built surfaces.
- There will be four construction work crews (3 at separate locations along the R503 and 1 on local roads) completing approximately 80-100m of trenching a day.

- At one-lane closure locations along the R503, traffic flow will be managed around the works using a stop-go system and flagmen to minimise delays and disruption to road users.
- 2 local roads to north of Newport and 1 local road near Upperchurch Windfarm will be closed for periods of between 1 week and 1 month – diversions will add 5 minutes to journey at the Newport closures and 10 minutes at the Upperchurch Windfarm closures.
- Traffic Management Plan will include measures to maximise road safety while keeping the free flow of traffic.
- Applicant will fund the costs of the Council engaging a chartered civil engineer to oversee quality control and compliance with drawings, specifications and road opening conditions.
- Impact on road pavement evaluated as moderate due to magnitude of works; however, works will be temporary, traffic on roads is light and road will be properly reinstated.
- Impact on bridges and culverts evaluated as neutral – majority of buried structures require no works and any required works will contribute to safer roads and improved infrastructure as replacement culvert will be of higher specification.
- Impact to roadside boundaries evaluated as imperceptible – boundary removal limited to existing field entrance for Mountphilips substation site and reinstatement of road boundary behind sightlines at widened entrance.
- Effect of delays to road users evaluated as slight due to lightly trafficked nature of the roads; availability of acceptable diversions; maintenance of local access; the temporary duration and the application of traffic management measures.

Mitigation Measures

- Project Design Environmental Protection Measures PD04, PD05, PD06, PD07, PD08, PD09, PD10, PD11, PD12 and PD13 relating to construction work hours, traffic restrictions at work areas, carrying out of works at different times from other works and outside school hours, consultations with utility providers, use of

flagmen at one lane closures, minimisation of impacts on schools and businesses, and funding of costs for quality control.

- Implementation of Traffic Management Plan for public roads.

Residual Impacts

10.8.11. No residual impacts.

Conclusions on Material Assets

10.8.12. The UWF Grid Connection will become part of the national electricity network. During construction of the grid connection, there will be no interruption of power supply on the electricity system or when adding a control point to the Kilnonan to Nenagh 110kV overhead line. During commissioning of the new Mountphilips substation, the 110kV line will be de-energised and switched out. Thus, the UWF Grid Connection, or cumulatively the Whole UWF Project will not cause any cumulative impacts on any built services.

10.8.13. Observers Carmel & Ned Buckley submit that the cumulative assessment leaves out the Newport wastewater plan and other windfarms in the area. The cumulative impacts of the proposal are set out in detail under Section 10.12 below. Section 9.7.6 above outlines that clarification has been received from Irish Water regarding the location of Irish Water infrastructure along the route of the UWF Grid Connection and that there are adequate separation distances, as per Irish Water's Code of Practice, and ESB Networks minimum standard clearances to other services.

10.8.14. The sensitive aspects evaluated under Material Assets (roads) include public roads and road users. All roads around the UWF Whole Project are likely trafficked. Adverse impacts to public roads and road users in terms of damage to roads and time delays will be imperceptible. The cumulative impact of the Whole UWF Project will range from imperceptible to slight. Any damage to the road pavement will be repaired and trenching locations will be reinstated to the satisfaction of Tipperary County Council. The Traffic Management Plan will include measures to maximise road safety while keeping the free flow of traffic. Observers the Rear Cross Tidy Towns Committee are concerned that the proposed grid connection works are reinstated to the current high standard without road scarring. The applicant has provided assurances that the road through Rear Cross will be properly reinstated

and this will include liaison with the tidy towns committee. This is covered in Section 9.7 above along with Observer James & Tanya Embleton's concerns regarding road stability.

10.8.15. Subject to the proper implementation of all other relevant mitigation and best practice measures, I would be satisfied that the UWF Grid Connection would not have any significant effect of the environment either individually or cumulatively with other elements of the Whole UWF Project, or any other projects or activities.

10.9. Cultural Heritage and the Landscape

10.9.1. Chapters 16 and 17 of the EIAR describe the general characteristics with respect to cultural heritage and the landscape in the study area. Sensitive aspects included for evaluation under Chapter 16: Cultural Heritage include recorded legally protected sites; other recorded sites; previously unrecorded sites; and unrecorded subsurface sites. Landscape contains sensitive aspects on landscape character and visual amenity.

10.9.2. Cultural heritage comprises sites of archaeological, historical or architectural significance within the receiving environment. A total of 39 no. recorded legally protected sites are within the 500m UWF Grid Connection study area and 14 no. are within 2km of Mountphilips substation.

10.9.3. 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 setting of the UWF Grid Connection comprises a rolling lowland rural landscape of fields and hedgerow to the west and a more upland rural landscape of forestry and farmlands throughout the central and eastern parts of the site.

Characteristics of the Proposed Development

10.9.4. From a landscape and visual perspective, the main impacts will occur during the construction phase of the UWF Grid Connection element of the Whole UWF Project. This includes the creation of compounds, use of machinery, clearing of vegetation and topsoil, stockpiling of materials, reinstatement, etc.

10.9.5. The operational phases of these elements of the Whole UWF Project in terms of the presence of permanent structures in the landscape will include the development of

the new 110kV substation at Mountphilips, comprising 2 no. end masts and a compound containing control building, 110kV busbars, circuit breakers, line disconnects, current and voltage measuring equipment, cable chairs, surge arresters, lightening protection monopoles and other electrical apparatus.

10.9.6. Clearly, the main visual and landscape impacts of the Whole UWF Project involves the erection of 22 no. wind turbines with overall height of 126.6m, together with 2 no. 80m meteorological masts, turbine foundation and crane hardstanding areas, access roads and an electrical substation. The turbines will be constructed on hills ranging in elevation from 280m to 401m OD. This element of the Whole UWF Project was permitted in August 2014 under Reg. Ref: 13/510003 (PL22.243040). The visual and landscape impacts of the consented windfarm were assessed at the time of this application and the passage of time has been considered in the current EIAR.

10.9.7. Another element of the Whole UWF Project is the UWF Replacement Forestry which is proposed to fulfil a replanting obligation arising from the felling of forestry for the Whole UWF Project. Approximately 6 ha of agricultural lands at Foilnaman will be planted with native trees and scrub species.

10.9.8. It should be noted that there are two designated scenic routes (V57 & V58) in the vicinity and waymarked walking trails including the Ormond Way walking route, the Ormond Way cycle route and the Eamonn a Chnoic Loop.

Predicted Impact of the Proposed Development

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

- Recorded legally protected sites – none of the 39 no. sites within 500m of the UWF Grid Connection are likely to be affected by construction works due to distance of works from these sites (outside Zone of Notification for all but 3 no. sites). No destruction impacts expected at the 3 no. sites.
- 4 no. sites within 2km of Mountphilips substation will have theoretical visibility of the new substation; however, due to low lying location, there will be no visual impact as substation is completely screened from view.
- Cumulative impacts with other elements of Whole UWF Project are not likely during construction and have no potential to occur during operational phase.

- 8 no. other recorded sites within 500m of UWF Grid Connection works area and 1 no. site within 2km of the substation site that will have theoretical visibility of the new substation.
- No potential for complete or partial destruction of other recorded sites from groundworks and separation distance. Mountphilips site has no extant features and has been subsumed into the modern agricultural landscape.
- No interaction with the columns or supporting structures of Anglesey Bridge.
- Due to location of 110kv UGC on paved roads outside Mountphilips substation site, separation distances and monitoring of groundworks, the potential for damage to previously unrecorded sites is limited to townland boundaries – 160m section of the Coole/ Freagh townland boundary will be removed to facilitate widening of entrance from the public road and a 10m section of the Mountphilips/ Coole townland boundary will be removed for the new access road to the substation compound. Impact imperceptible, mainly due to the small extent of change.
- Magnitude of impact to unrecorded subsurface sites cannot be determined at this stage – possible that unknown archaeological material could be impacted by the UWF Grid Connection works, particularly at Mountphilips substation site and along R503 within Zone of Notification for two recorded legally protected sites. Unlikely that any fully intact remains of special archaeological significance will be uncovered.
- Whole UWF Project will have imperceptible to slight impact on cultural heritage.

<u>Predicted Impact of the Proposed Development</u>

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

- Impact on landscape character evaluated as imperceptible for alteration of land cover – typical and abundant within excavations taking place almost wholly within the public road.
- Slight to imperceptible impact for construction activity causing a reduction in rural tranquillity – small extent and visual containment of Mountphilips substation site and the transient and temporary nature of construction works.

- Slight to imperceptible impact in terms of intensification of built environment – above ground structures are essentially limited to Mountphilips substation.
- Perceived impacts on landscape character will not contravene the objectives of Tipperary County Development Plan Landscape Character Areas.
- Intensity of activity during construction causing visual disharmony will be imperceptible to slight because of degree of visual containment of Mountphilips substation site and temporary and transient nature of construction works along the public road.
- Imperceptible impact in terms of new features or loss of existing features during operational stage due to high level of screening, the barely discernible permanent surface expression of the 110kV UGC and the medium sensitivity of visual receptors within the study area.
- Cumulative impact of Whole UWF Project will not be significant mainly due to the transient nature of construction works, separation distances and absence of inter-visibility between Mountphilips substation and other elements of the Whole UWF Project and other projects.

Mitigation Measures

- Project Design Environmental Protection Measures PD05, PD07, PD11, PD14 and PD15 relating to restriction of construction traffic, works along the route taking place and different time to other works, monitoring of groundworks and culvert replacement by archaeologist.

Residual Impacts

10.9.11. No residual impacts.

Conclusions on Cultural Heritage and the Landscape

10.9.12. The Zone of Notification for three recorded legally protected sites occurs within 500m of the UWF Grid Connection; however, no destruction impacts are expected at these sites. Mountphilips substation will be screened from recorded legally protected sites and other recorded sites with theoretical visibility of the substation. The potential for damage to townland boundaries will be limited in extent and although the magnitude of impact on unrecorded subsurface sites cannot be determined at this stage, it is

unlikely that fully intact remains of special archaeological significance will be uncovered. Monitoring of groundworks by an archaeologist will take place to archeologically record any structures, features or objects of significance.

10.9.13. Observers Emer Ó'Siochrú & Toal Ó'Muire note that the proposed cable route will be buried along the public road and over heritage stonework bridges. Two bridges are listed in the NIAH along the grid connection route and the cable will be constructed within the concrete curbs or road pavement over the bridge. Some works may be required to the bridge parapets and this is to be agreed with the Architectural Heritage Advisory Service of the Department of Culture, Heritage and the Gaeltacht.

10.9.14. Construction phase visual impacts on the landscape will include the creation of compounds, use of machinery, clearing of vegetation and topsoil, reinstatement, etc. Operational phase impacts of the UWF Grid Connection will relate mainly to above ground structures associated with the Mountphilips substation. This site is low lying and is well screened from public view.

10.9.15. The main visual and landscape impacts of the Whole UWF Project will be the consented 22 no. wind turbines and it was assessed that the windfarm will impact visually on the area but not to a significant degree. Observers Emer Ó'Siochrú & Toal Ó'Muire are concerned that the proposal will adversely impact on tourism with the area. However, as noted in Section 9.6 matters relating to the visual impact of turbines themselves have been fully assessed and decided upon by the Board under permitted case PL22.243040. The overall visual impact of the Whole UWF Project from sensitive locations, including designated viewpoints, can be assessed as slight to imperceptible.

10.10. Land

10.10.1. The main existing land use within the UWF Grid Connection boundary is agriculture at the Mountphilips substation site. The remainder of the 110kV UGC is situated on public roadway to the location of the access to the permitted substation at Upperchurch Windfarm. There will be some loss of connectivity between land parcels and temporary loss of use of lands during construction at the Mountphilips substation site.

10.10.2. It would appear that all lands are necessary for the construction and operational phases of the proposed development. The impact of land take will be mitigated through reinstatement, provision of new accesses and replacement boundaries. Overall, the percentage of each landholding lost to the proposed development will be very small.

10.10.3. In terms of the Whole UWF Project and the passage of time since the preparation of the previous EIS, there has been no material change in agricultural landholdings, and notwithstanding the felling of 9 ha of forestry within Upperchurch Windfarm site since 2013, forestry is predominantly in growth stage and no new agricultural lands have been planted in the intervening period.

10.11. Vulnerability of the Project to Major Accident and/ or Natural Disaster

10.11.1. Section 5.5 of the EIAR identifies any major accidents or natural disasters that have the potential to affect the UWF Related Works. It is confirmed that the proposed project does not pose a major hazardous accident risk. The nearest SEVESO facilities at Grassland Argo in Limerick are not in proximity to the UWF Grid Connection site.

10.11.2. Land slippage and flooding are natural disasters that could potentially occur. However, there is an absence of peat or very shallow peat at the Mountphilips substation site and geotextile material will be used to support the trench where peat is mapped under some short sections of the public road. A Flood Risk Assessment completed for the UWF Grid Connection concluded that there is no increased flood risk as a result of the proposed development, mainly due to the underground nature of the 110kV UGC and the minimal footprint of the overground permanent infrastructure at Mountphilips.

10.11.3. I am satisfied that given the nature of the proposed development, and the mitigation measures proposed, 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.

10.12. Cumulative Impacts & Environmental Interactions

10.12.1. Chapter 18 of the EIAR sets out the various inactions 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 UWF Grid Connection is carried out along with the other elements of the Whole UWF Project and other projects and activities.

10.12.2. The main potential cross factor effects to population and human health arise from effects to air, water, 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. Increased dust and noise can also be caused by an increase in traffic volumes. Impact on water quality can have cross factor effects on human health.

10.12.3. Cumulative visual impacts to the landscape can have cross factor effects with population in terms of reduction of tourism revenue. Cross factor effects to biodiversity can be caused by effects to soils, water and air through excavation, contamination and increased dust, noise and vibration. Changes in drainage regimes can affect land in terms of grass growth rates.

10.12.4. The other main cross factor effects relate to climate/ land and soils (land use change, increased traffic); material assets (damage to services from roadworks); cultural heritage (landscape and visual setting); and landscape/ biodiversity (severance of hedgerows and removal of trees).

10.12.5. Many of the interactions 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.

10.12.6. The cumulative effects of the proposed UWF Grid Connection is assessed together with the other elements of the Whole UWF Project. The other elements of the Whole UWF Project include Upperchurch Windfarm (granted under PL22.243040); the UWF Related Works (concurrent appeal ABP-303634-19); and UWF Replacement Forestry (afforestation licence approved). UWF Related Works predominately

overlay the consented Upperchurch Windfarm. There is also an overlap between UWF Related Works and UWF Grid Connection at Knocknabansha, Knockmaroe and Knockcurraghbola Commons.

10.12.7. The EIAR includes an evaluation of the cumulative effects of UWF Grid Connection for the sensitive aspects under each environmental factor. The permitted Upperchurch Windfarm is not re-evaluated; however, the evaluation of the cumulative effects of the consented Upperchurch Windfarm and its impact information and impact significance are drawn from the Board's original assessment in 2014. The effects of passage of time is considered and presented in the cumulative baseline information for each relevant sensitive aspect. Where a new impact pathway was identified during scoping for cumulative receptors, this new impact was also examined for the consented Upperchurch Windfarm.

10.12.8. 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 and a number of activities that do not require planning permission (UWF Other Activities) are also included in the EIAR as part of the cumulative assessment.

10.12.9. In general, I would be satisfied with the methodology provided within the EIAR for cumulative assessment. The subject development is assessed with all the other elements of the Whole UWF Project and any relevant other activities. There are instances where the subject development does not cause effects by itself but the other elements of the Whole UWF Project have nonetheless been considered at the particular sensitive aspect in question. Overall, this provides for a robust and complete assessment of the proposal by itself and any cumulative interactions with other aspects of the proposal.

10.12.10. It is considered by a number of observers on the case that in light of the O'Grianna and Others v. An Bord Pleanála judgement (IEHC 632, 12/12/2014), the cumulative assessment cannot rely on surveys and analysis from the consented windfarm. Notwithstanding this, it has been confirmed within O' Grianna and Others v An Bord Pleanála IEHC 7 (2017), North Kerry Wind Turbine Awareness Group v An Bord Pleanála IEHC 126 (2017) and Alen-Buckley v An Bord Pleanála IEHC 541 (2017)

that there is no requirement to obtain planning permission for all integral parts of a project at the same time or as part of a single planning application.

10.12.11. The applicant has considered the impact of the UWF Grid Connection cumulatively with all other aspects of the Whole UWF Project, including the consented windfarm. The consented windfarm has been fully 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 consented development in its own right. Competent experts have reviewed the 2013 and 2014 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 UWF Grid Connection and the Whole UWF Project.

10.13. Reasoned Conclusion

10.13.1. 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 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** in terms of the local economy from increased spending and jobs during the construction period.
- Construction phase impacts on Population and Human Health will be mitigated through a range of Project Design Environmental Measures and Best Practice Measures, e.g. construction within 350m of a residence will not take place at the same time as the Upperchurch Windfarm/ UWF Related Works.
- Slight to moderate impacts on **Biodiversity** in terms of aquatic habitat and species from the UWF Grid Connection. Impacts on Hen Harrier will be not significant/ imperceptible and slight positive in terms of habitat enhancement for Hen harrier and general birds. The 110kV UGC take place mostly along the public road and the immediate vicinity of this road is of little use to Hen Harrier. Measures to avoid, prevent or reduce negative effects on Hen Harrier include confirmatory surveys and control of construction works close to breeding/ resting

places. In terms of cumulative assessment, there will be moderate positive impacts on Hen Harrier, general birds and terrestrial habitat from the planting of trees as part of the Upperchurch Hen Harrier Scheme.

Two bats roosts in bridges that could be affected by the UWF Grid Connection works are considered to be of negligible importance. Project design measures incorporated into the development includes pre-construction surveys of bridges, exclusion procedures and provision of alternative roosting opportunities under derogation from the NPWS.

Evidence of otter was found in close proximity to 3 identified crossings; however, no holts or resting places occur and works will take place during daylight hours and from the surface of the bridge only.

In addition to Project Design Environmental Measures and Best Practice Measures, an Environmental Management Plan developed for the proposal will include a Surface Water Management Plan and Invasive Species Management Plan.

- Potential cumulative impacts to local surface **Water** bodies in relation to surface water quality impacts and impact to local water dependant habitats. However, the majority of in-stream works in the Whole UWF Project works area are within drains or marginal watercourses and there is little potential for pathways to the Lower Shannon SAC. Most of the watercourse crossings along the UWF Grid Connection are already culverted and local surface water quality effects will be localised. Watercourses to be crossed throughout the Whole UWF Project area are distributed over a large geographical area and within the River Shannon and River Suir catchments.

  Project Design Measures and detailed best practice measures such as the requirement that works will be in compliance with IFI guidance, implementation of a sediment controls and other drainage measures, and measures relating to the handling and storage of fuels, oils, chemicals and overburden will ensure that there will be no significant effects on water. An Environmental Management Plan that includes a Surface Water Management Plan will also provide a framework for water quality protection.

- Positive cumulative impacts on **Climate** from the Whole UWF Project due to the production renewable wind energy and a reduction in the use of fossil fuels.
- Potential impacts in terms of **Material Assets (Roads)** during the construction phase include damage to road pavements and increase journey times for road users arising from construction works and construction deliveries to the site. Impacts will be mitigated through implementation of a traffic management plan that will include measures to maximise road safety and traffic free flow.
- Potential impacts on **Cultural Heritage and the Landscape** will be mitigated during the construction stage through archaeological monitoring of ground works and agreement with the Department of Culture, Heritage and the Gaeltacht in relation to parapet works to bridges listed in the NIAH. The overall visual impact of the Whole UWF Project from sensitive locations, including designated viewpoints, is evaluated as imperceptible to slight. The main visual impact will be from the turbines themselves. These were assessed in the original EIA, where it was accepted that the development will not change the visual character of the area to a significant degree.

10.13.2. Having regard to the above, I am satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment. The Board is satisfied that the reasoned conclusion is up to date at the time of making the decision.

11.0 Appropriate Assessment

11.1. 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

11.2. **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.

11.3. The proposed development comprises the construction of a 110kV electrical substation and underground 110kV grid connection to an already permitted (but not constructed) windfarm substation to the west of Upperchurch, Co. Tipperary. The proposal 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).

11.4. **Geographical Scope and Main Characteristics**

11.4.1. The proposed UWF Grid Connection (110kV UGC) is located between Mountphilips to the north of Newport village and the permitted Upperchurch Windfarm. The route of the UWF Grid Connection will continue from the proposed Mountphilips substation for a distance of 30.5km west and through an upland area as far as in the eastern foothills of the Slievefelim to Silvermines mountains to the permitted substation near Upperchurch.

11.4.2. The surrounding rural area is sparsely populated with the main land uses being agricultural grassland, commercial forestry plantations, public and private roads and isolated residences and farmsteads. Other nearby settlements include Kilcommon and Rear Cross.

11.4.3. Mountphilips substation will be located on lower lying agricultural grasslands and the route of the grid connection will follow paved public roads through the uplands to the permitted substation. Lands either side of the proposed UWF Grid Connection comprise typical roadside habitat such as hedgerows, trees, earth banks, gardens and amenity grasslands. The wider uplands include agricultural and forestry lands. The construction works boundary will not extend into verges/ natural environment

and a minimal area of roadside vegetation may need to be cleared and reinstated at the location of any culvert replacement works. Underground cabling will be laid over a distance of 30.5km in 1.25m deep and 0.6m wide trenches and over 65 no. watercourses outside Mountphilips substation.

11.4.4. The proposed UWF Grid Connection passes through the boundary of the Slievefelim to Silvermines Mountains SPA for 8km and overlaps the boundary of the Lower River Shannon SAC at six locations. The Lower River Suir SAC and the Clare Glen SAC are located in the surrounding area. The Newport River, Clare River and Bilboa River are the main watercourses along the route and these are all in the River Shannon catchment. They contain good salmonid habitat, good/ high biological water quality and good ecological status. The UWF Grid Connection is mostly located within the River Shannon catchment, with a small section to the east located within the River Suir catchment. Upperchurch Windfarm/ UWF Related Works are mostly within the River Suir catchment with a small section with the Shannon catchment.

11.4.5. The proposed Mountphilips 110kV substation will include a compound (10,290 sq.m.) containing a control building, 110kV busbars, circuit breakers, line disconnects, current and voltage measuring equipment, cable chairs, surge arresters, lightening protection monopoles and other electrical apparatus. The substations will be c.130m east of the Killonan to Nenagh 110kV overhead line where 2 no. end masts will be constructed to provide a connection to electrical equipment in the substation compound via underground cable.

11.4.6. Other elements of the Whole UWF Project include the consented windfarm of 22 no. turbines, substation, 11.6km of windfarm roads and ancillary works including drainage, construction compounds, borrow pits, and storage and reinstatement of soils. The windfarm will occupy 6.4 hectares of land when operational. UWF Replacement Forestry will see the afforestation of 6 hectares of agricultural land at the townland of Foilnaman and UWF Other Works will include haul route activities, Upperchurch Hen Harrier Scheme and monitoring activities.

11.5. Screening the need for Appropriate Assessment

11.5.1. 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.

11.5.2. 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).

11.5.3. European sites considered for Stage 1 screening:

European site (SAC/SPA)	Site code	Distance to UWF Grid Connection	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	0 km	Numerous connections	Y
Lower River Suir SAC	002137	4.3 km	Potential connections	Y
Clare Glen SAC	000930	1.6 km	Potential connections	Y
Anglesey Road SAC	002125	2.9 km	No pathway	N
Bolingbrook Hill SAC	002124	8.5 km	No pathway	N
Keeper Hill SAC	001197	4.3 km	No pathway	N
Silvermines Mountain SAC	000939	9.4 km	No pathway	N

European site (SAC/SPA)	Site code	Distance to UWF Grid Connection	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Silvermines Mountain West SAC	002258	7.7 km	No pathway	N
Philipstown Marsh SAC	001847	12 km	No pathway	N
Kilduff, Devilsbit Mountain SAC	000934	16.8 km	No pathway	N
Glenstal Wood SAC	001432	2.6 km	No pathway	N
Slieve Bernagh Bog SAC	002312	11.5 km	No pathway	N
Lough Derg, North-east Shore SAC	002241	26.3 km	No pathway	N
Glenomra Wood SAC	001013	11.3 km	No pathway	N
Tory Hill SAC	000439	26 km	No pathway	N
Ratty River Cave SAC	002316	24.5 km	No pathway	N
Askeaton Fen Complex SAC	002279	31 km	No pathway	N
Barrigone SAC	000432	44 km	No pathway	N
Curraghchase Woods SAC	000174	33.4 km	No pathway	N
Lough Derg (Shannon) SPA	004058	10.2 km	No pathway	N
River Shannon and River Fergus Estuaries SPA	004077	16.9 km	No pathway	N
Stack's to Mullaghareirk Mountains, West Limerick Hills & Mount Eagle SPA	004161	50.9 km	No pathway	N

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

11.5.4. Based on my examination of the Appropriate Assessment Report including Screening for Appropriate Assessment Report and NIS submitted by the applicant, together with 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)

11.5.5. Table 2 below provides a screening summary matrix where there is a possibility of significant effects, or where the possibility of 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 the SPA (i.e. disturbance, mortality).
Lower River Shannon SAC **Qualifying Interests:**	Yes Direct effects to Qualifying Interest habitat [3260] (i.e. habitat loss, fragmentation, degradation,	Yes Indirect effects to qualifying interest habitat [3260] (i.e. via reductions in	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	water quality or spread of invasive species) within SAC Indirect effects to qualifying interest habitat of a SAC site [3260] (i.e. via reductions in water quality or spread of invasive species) ex situ the SAC Indirect effects to qualifying interest habitat Alluvial Forests [91E0] (i.e. via reductions in water quality or spread of invasive species) within or 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)

11.5.6. 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.

11.5.7. There is no potential for the proposed UWF Grid Connection 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.

11.5.8. With respect to the SPAs in the study area, there will be no direct habitat loss or habitat degradation on any site including the Slievefelim to Silvermines Mountains SPA. The UWF Grid Connection continues through the Slieve Felim to Silvermines Mountains SPA; however, all works will take place on paved roads. The UWF Grid Connection is outside 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 Stack's 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.

11.5.9. 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 Appropriate Assessment Report 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.

11.6. The Natura Impact Statement and Associated Documents

11.6.1. The application was accompanied by an Appropriate Assessment Report for the UWF Grid Connection comprising a Stage 1: Screening for Appropriate Assessment and a Stage 2: Natura Impact Statement dated October 2019 and submitted to the Board on 13th December 2019. The following documents are appended to the Appropriate Assessment Reporting:

- Appendix A1: Finding of No Significant Effects (FONSE) Report
- Appendix A2: Scoping for Other Unrelated Projects
- Appendix A3: Inventory & Classification of Watercourses at Crossing Locations
- Appendix A4: Aquatic Habitats & Species Fieldwork & Survey Results
- Appendix A5: Otter Fieldwork & Survey Results
- Appendix A6: Hen Harrier Fieldwork & Survey Results
- Appendix A7: Hen Harrier Surveys at Upperchurch Windfarm 2015 – 2017
- Appendix A8: General Birds Fieldwork & Survey Results
- Appendix A9: Accompanying Figures
- Appendix A10: UWF Grid Connection Environmental Management Plan

11.6.2. In general, I am satisfied that the Appropriate Assessment Reporting (including NIS) for UWF Grid Connection 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.

11.6.3. The Appropriate Assessment Report, which contains the Screening for Appropriate Assessment and the NIS were informed by the following studies, surveys and consultations:

- Review of conservation objectives, site synopsis and site boundary information for European Sites within the study area (study area taken as 15km from construction works boundary, extended to 15km from the boundary of all other elements of the Whole UWF Project).
- Location and layout mapping for the UWF Grid Connection project.
- Detailed description of UWF Grid Connection project, and a review of the descriptions of other elements of the Whole UWF Project, including construction methodologies;
- EPA online mapping for watercourse features: https://gis.epa.ie/EPAMaps/
- Supporting ecological receptor information described in full in Volume C2 Chapter 8: Biodiversity of the UWF Grid Connection EIA Report October 2019, including the Mitigation Measures for UWF Grid Connection (including the Project Design Measures, Surface Water Management Plan, Invasive Species Management Plan, Environmental Emergency Response Procedures, Best Practice Measures, along with a review of the Best Practice Survey Methods used to inform the Biodiversity evaluation.
- Appendix A10: Environmental Management Plan (appended to this document), along with:
- Site visits and field surveys for the UWF Grid Connection project, and

- Review of the descriptions of the Other Elements of the Whole UWF Project, including the review of planning documentation and environmental reports (including Appropriate Assessment reporting; construction methodologies; supporting survey information from the Upperchurch Windfarm (2013), and from the previous (since refused) UWF Grid Connection (2018), and from the UWF Related Works appeal to An Bord Pleanála documentation (February 2019)) for the Other Elements of the UWF Grid Connection (Volume F: Reference Documents).
- Review of planning documentation and environmental reports for other unrelated projects i.e. Milestone Windfarm, Newport Town Park, Rear Cross Quarry, Curraghduff Quarry, Castlewaller Windfarm, and Bunkimalta Windfarm.
- Consultations with statutory consultees and other relevant bodies between January 2019 and July 2019 as follows:
    - Phone correspondence with NPWS on 22nd January regarding any possible Hen Harrier nest locations
    - Consultation letter (13/03/19) to Development Applications Unit (DAU) describing revised UWF Grid Connection development
    - Consultation letter (13/03/19) to Inland Fisheries Ireland (IFI) describing revised UWF Grid Connection development
    - Exchange of maps (19/03/19) with IFI detailing watercourse crossing methods and outline construction methodologies
    - On site meeting with IFI (21/03/19) to discuss methodology for watercourse crossing works and point visits
    - Consultation letters to DAU and IFI (22/05/19 to 09/08/19) describing final route of the 110kV UGC avoiding Newport town and map showing same.
- Ecological baseline surveys

11.6.4. The NIS concluded that, subject to implementation of mitigation measures, neither the UWF Grid Connection, nor any other element of the Whole UWF Project, alone

or in combination, will result in any effects that will adversely affect the integrity of the European Sites under consideration, having regard to their respective conservation objectives.

11.6.5. 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).

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

11.7.1. The following is an assessment of the implications of the project on the relevant conservation objectives of the European sites using the best 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.

11.7.2. 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

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

- Slievefelim 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)

11.7.4. 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).

11.7.5. **Aspects of the proposed development:** The main aspects of the proposed development that could adversely affect the conservation objectives of European sites include;

- Permanent or temporary reduction or loss of suitable foraging habitat for Hen Harrier from permanent structures, forestry felling and realignment of consented roads
- Disturbance/ displacement of foraging Hen Harrier (ex-situ during the breeding season) during construction works (trenching, hedgerow removal, widening of entrances and access roads for transport of materials).
- 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

11.7.6. **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 project (alone and in combination with 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.

11.7.7. Supplemental to the summary tables, key issues that arose through consultation and through my examination and assessment of the NIS 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
- Disturbance/ displacement of foraging Hen Harrier (within and ex-situ SPA during breeding season)
- Disturbance/ displacement of foraging Hen Harrier (within and ex-situ SPA outside breeding season)
- Reduction of prey item species (within and ex-situ the SPA)

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 reduced nor is likely to be reduced for the foreseeable future, and	*Permanent or temporary reduction or loss of suitable foraging habitat.* - Land cover change, removal of hedgerows, vegetation clearance, earthworks. - Loss of high dependency foraging habitat within 2km of nest, at key periods of the breeding cycle may result in reduced productivity and/or nest success.	- Construction works during breeding season will only take place at Mountphilips substation and 110kV UGC will take place Sept to Feb. (PD01) - Confirmatory Hen Harrier breeding surveys will be carried out at Mountphilips substation site – no works will take place within 2km of identified active Hen Harrier nest during the	Assessed with permitted Upperchurch Wind Farm and the Whole UWF Project (UWF Grid Connection, UWF Replacement Forestry and UWF Other Activities), as well as consented Milestone, Castlewaller and Bunkimalta Windfarms, forestry/ agriculture and turf cutting.	Yes - No temporary loss of suitable foraging habitat as a result of the construction of the UWF Grid Connection within or outside of SPA. Nearest nest location to Mountphilips substation site is 4.6km – habitat at this location suboptimal based on distance from nest. - Negative effects of Upperchurch Windfarm, outside of SPA is effectively mitigated by activities consented under the

	- there is, and will - probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.	*Disturbance/ displacement of foraging Hen Harrier during the breeding season.* - Noise and visual intrusion; operating machinery; presence of construction personnel associated with Upperchurch Windfarm and UWF Replacement Forestry and UWF Other Activities, and associated with farming and forestry management activities, turf-cutting, quarrying works and potentially other windfarm construction sites. - Disturbance can impair foraging success during critical breeding periods. Unlikely at distances >150m. *Disturbance/ displacement of foraging Hen Harrier outside the breeding season.* - Cumulative impact sources as above. - Disturbance/ displacement when foraging. - Disturbance to night-time roosts (no significant effects due to	breeding season. (PD02) - 700m of new hedgerows at Mountphilips site and 370m at UWF Related Works site. - 110kV construction works along certain local roads will not take place at the same time as the UWF Related Works haul route works along these roads, or as concrete deliveries for turbines. (PD07) - PD46: Monitoring of construction works by Environmental Clerk of Works daily. - PD05: restriction on construction traffic speed. - PD03: Confirmatory surveys to record roosting locations within 1km of UWF Grid Connection (not currently known). Works within 1km of any roost will be limited to 1 hour before sunset and 1 hour after sunrise in roosting season. - PD58: Hedgerow removal will take place outside bird breeding season.	- 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 UWF Related Works site for foraging. - Due to separation distances, there is very low probability of cumulative disturbance effects. - No works for either the UWF Related Works or the UWF 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. - Cumulative impact outside breeding season relates to potential for concurrent activity encountered sequentially by foraging birds as they move through areas	Upperchurch Windfarm Hen Harrier Scheme. - Net gain to Hen Harrier due to Hen Harrier Scheme is 128Ha-100.22Ha which is 27.8Ha, and the additional 4ha due to the UWF Replacement Forestry, giving a total net gain of 31.8Ha. - Habitat surveys of lands within 2km of known nests demonstrate that there is ample suitable foraging habitat within the core foraging area around 10 nests. - No likelihood of Hen Harrier depending on habitat within 150m of construction works area at Mountphilips due to separation distance and overall extent of habitat availability. - Hen Harrier likely to be habituated to road-based and farming-based noise and visual intrusion. - Duration of effects and high reversibility. - Hen Harrier less sensitive to disturbance during non-breeding season as they make substantial movements during this period. - Effects of disturbance during non-breeding season are at an individual level rather than affecting chicks.

		separation distance with UWF Grid Connection works). - Demonstrated low numbers of Hen Harrier wintering in the vicinity. *Reduction in prey item species.* - Excavations, visual intrusion, machinery, presence of construction personnel, Land Cover Change, Forestry Felling, removal of Hedgerows, land cover change from agricultural practices such as drainage, peat extraction. - Reductions in availability of prey may disadvantage foraging Hen Harrier, particularly when provisioning young. Typically related to construction disturbance and operational habitat loss. As per EIAR, effects on general birds ranges from imperceptible to slight. - 0.05 ha of suitable foraging habitat loss at Mountphilips site – negligible in magnitude.	- Surface Water Management Plan and Invasive Species Management Plan to avoid secondary deterioration of adjacent SPA habitat, with and ex-situ the European Site.	where works are taking place. - 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 linear of 110kV UGC, disturbance and effective habitat loss through displacement would be brief to temporary and temporary at Mountphilips. - no likelihood of Hen Harrier exclusively depending on habitat within 150m of UWF Grid Connection during winter months. - Sequential cumulative effects mitigated by scale and availability of suitable habitat and low numbers wintering. - Lands within 150m of construction works area of Whole UWF Project only form a very small proportion of available suitable foraging habitat in wider area. Also, works along route and in windfarm will not take place at the same time. - Low number of prey species lost through operational land cover change and additional species promoted through management. - Favorable conservation condition of Hen Harrier will not be impacted through any reduction in habitat, range, population status or viability through disturbance or

					exclusion effects, or reduction in prey items.

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 To maintain the favourable conservation	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?

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:* - instream works; culvert replacement works; parapet works; movement of soils and machinery; excavation works; use of hydrocarbons & cement-based compounds; reinstatement works. - Water quality effects due to sedimentation. - Water quality effects due to contamination by oils and cementious material. - Adverse effects on QI habitat and conservation objectives such as distribution and extent of QI habitat, effects to structure and composition of QI habitat, altered hydrological regime and secondary effects on prey item species. - Secondary adverse effects on supporting habitat and/ or species downstream. - potential for decrease in aquatic habitat quality due to instream/ culvert replacement works at 3 no. watercourses with fisheries value. *Changes in flow regime* - Impact sources as above. - Works at, or in close proximity to, watercourses	- Measure to ensure mitigation implementation (PD46) - 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 the UWF Grid Connection Environmental Management Plan.	- Upperchurch Windfarm or UWF Replacement Forestry do not occur within Shannon catchment and elements of UWF Other Activities within Shannon catchment do not require instream works. - UWF Related Works within Shannon catchment will cause limited construction related effects. - Potential for cumulative effects with other windfarms and grid connections but evaluated as low due to large size and cumulative capacity of catchments, etc. - Riparian habitat impact that may affect aquatic ecology and fisheries receptors are limited to discrete locations, upstream from SAC with no overlap with other elements. - Cumulative impact evaluated as medium due to the presence of invasive species	Yes - Spatial extent of habitat quality effects arising from Whole UWF Project will occur within footprint of the instream/ culvert replacement works. - Effects will be dispersed between two regional catchments. - Once off frequency and brief to temporary duration of works. - Change in flow regime avoided through isolation of flow, over pumping of water, use of deflector plates, equilibrated restoration of flow and sensitive restoration of bed and banks. - Instream works potentially affecting flow regime are required at a limited number of locations. - Riparian habitat impacts will be reversible with reinstatement and temporary to short-term ex-situ the SAC. - implementation of the Invasive Species Management Plan for UWF Grid Connection and UWF Related Works, including
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.	have potential to indirectly affect aquatic species and habitat through changes to flow regimes which can be caused directly by morphological changes due to instream works. - Immediately downstream effects not considered to extend to a distance large enough to result in noticeable negative effects on downstream SACs. *Riparian habitat degradation within or ex-situ SAC* - Impact sources as above. - Removal or damage of riparian vegetation has potential to impact on quality of riparian habitat and in turn watercourse morphology, shading, bank stability and nutrient and sediment loading. - Riparian habitat degradation ex-situ leading to increased downstream sediment loads. - Secondary adverse effects on supporting habitat/ species for downstream. - Any reinstatement of immediately adjacent culvert finishing works will be of negligible magnitude and will not result in any impact on adjacent (ex-situ to SAC) riparian habitat.	- 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	throughout the study area. - Other projects are obliged to meet statutory requirements with regards to introduction or spread of invasive species. - Upperchurch Windfarm/ UWF Related Works do not require instream works in the Bilboa_SC_010 sub-catchment and neither are located in Newport or Killeengarrif sub-catchments – potential for cumulative impact limited to Suir catchment. - Negligible impact with other projects as it is expected there will adherence to setback buffers and implementation of consented mitigation. - 2 watercourse crossings within zone of overlap for UWF Related Works and UWF Grid Connection have marginal habitat value to Otter. - Sequential effects could occur where Otter foraging or transiting along watercourses	best practice Biosecurity Protocols (IFI, 2010), and the implementation of best practice measures for Upperchurch Windfarm will ensure that there is no likelihood of spread of invasive aquatic species occurring. - No instream works proposed within Lower Shannon SAC. - No disturbance to fisheries in their natural location within the SAC. - Creation of adverse flow conditions or habitat limitations due to changes in flow or morphology will be limited to the specific works period within or adjacent to the aquatic habitat. - Fish likely to mobilise outside of their territories due to human disturbance but will return once disturbance effect diminishes. - Magnitude of effect to Otter expected to be negligible considering duration and scale of works, mitigation measures, etc. - No potential for cumulative effects to Otter from both the UWF Related Works and Upperchurch Windfarm due to absence of Otter
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.	*Spread of invasive aquatic species.* - Impact sources as above. - Not restricted to footprint of works but can be transported upstream or downstream. - Invasive species can compromise bank integrity, riparian structural diversity and riparian invertebrate production. - May result in direct adverse effects on QI habitats and conservation objectives such as distribution and extent of QI habitat, effects to structure and composition of habitat, altered hydrological regime and secondary effects of prey. *Direct mortality on QI fisheries and other species* - No instream works within SAC. Pathways for inadvertent mortality in the event of debris from parapet raising/ re-surfacing material etc. falling over the bridge. *Disturbance/ displacement of QI fisheries and other species within or ex-situ the SAC* - Impact sources as above. - Potential impacts from instream works and machinery operation within or in close proximity to any watercourse either comprising natural		experience multiple sources of instruction/ disturbance in quick succession, such as encountering work crews.	within these sites and the placement of most of Upperchurch Windfarm in the Suir catchment.
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.				

		locations within SAC or ex-situ supporting locations upstream. - Extent of disturbance/ displacement will be limited to direct footprint of any instream works within watercourses that support Atlantic salmon and Brown trout populations. - May result in direct adverse effects on QI species and conservation objectives such as distribution and numbers of adults and/ or juveniles and secondary effects on prey. - May be occasional, very short duration disturbance to fish populations utilising habitat beneath bridges. - Disturbance at drilling locations but magnitude due to noise and vibration will be low and not within SAC. *Direct mortality and disturbance/ displacement of Otter* - Watercourses are present which are hydrologically connected to SAC and there is potential for secondary effects on this QI species both with and ex-situ. - Impact sources as above. - May be sensitive to mortality of foraging/ resting animals from inadvertent collision with moving vehicles or machinery			

		(no active holts within 300m of works). - Evidence of Otter found at 3 watercourse crossing locations and no active breeding or resulting site identified. No instream works required.			
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* - culvert replacement works; movement of soils and machinery; excavation works; use of hydrocarbons & cement-based compounds; reinstatement works. - Water quality effects due to sedimentation. - Water quality effects due to contamination by oils and cementious material. - Adverse effects on QI habitat and conservation objectives such as distribution and extent of QI habitat, effects to underlying water quality and vegetative composition of QI habitats and secondary effects on prey items. - Secondary adverse effects on supporting habitat and/ or species downstream. - Effects on surface water quality from trench excavation within road and at watercourse crossings – only one of fisheries value outside of SAC but upstream. Evaluated as negligible. *Changes in flow regime* - Creation of adverse flow conditions or habitat limitations due to changes in flow or morphology will be	- Measures to ensure mitigation implementation (PD46) - 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). - Environmental emergency response procedures included in 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. - Monitoring measures - Specific measures to avoid or reduce effects on SAC species. - Specific measures to avoid or reduce effects on Otter	- Instream works; movement of soils and machinery; excavation works; forestry felling; hydrocarbons; reinstatement; earthworks and groundwork. - Due to limited extent of works associated with UWF Grid Connection, magnitude of cumulative impacts with regard to interactions with UWF Related Works to instream aquatic ecology and changes to flow regime are negligible. - Cumulative impacts with other projects also negligible. - potential for decrease in aquatic habitat via changes to flow regime at 5 no. watercourse crossings where instream works required are all part of UWF Related Works. - Neither Upperchurch Windfarm, UWF Replacement Forestry nor UWF Other Activities will require any instream works. - potential for introduction of non-	Yes - No instream works or culvert replacement required for UWF Grid Connection on watercourses of fisheries value from works in the Suir catchment. - Effects on habitat quality will be dispersed within the Suir catchment. - Any reduction in habitat quality due to potential downstream siltation effects not significant in context of conservation objective around aquatic species and habitat. - No spatial or temporal overlap between instream UWF Related Works and trenching works for UWF Grid Connection. - Riparian habitat impacts that may affect aquatic ecology and fisheries receptors are limited to discrete locations. - Implementation of Invasive Species Management Plan including best practice biosecurity protocols. - Instream works will not be undertaken without isolation of flow within the watercourse and translocation of fish. - Instream works for UWF Related Works will only take
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.	limited to specific works period within or adjacent to aquatic habitat. - The magnitude of effect on the physical instream habitat i.e. watercourse channel morphology, substrate, and flow character is evaluated as negligible with regard to availability, diversity and quality of habitat supporting aquatic species. - Only one Class 2 first order stream and no requirement to replace culvert at this location – potential for downstream flow regime effects is limited. *Riparian habitat degradation within or ex-situ the SAC.* - Impact sources as above. - Removal or damage of riparian vegetation has potential to impact on quality of riparian habitat and in turn watercourse morphology, shading, bank stability and nutrient and sediment loading. - Riparian habitat degradation ex-situ leading to increased downstream sediment loads. - Secondary adverse effects on supporting habitat/ species for downstream. - Any reinstatement of immediately adjacent culvert finishing works will be of negligible magnitude and will		native, invasive species at 37 no. watercourse crossing locations within Suir catchment associated with Whole UWF Project. - 5 no. instream works locations (UWF Related Works) where instream works in fish bearing streams required – mortality limited to affected stretch. - Sequential effects could occur where Otter foraging or transiting along watercourses experience multiple sources of instruction/ disturbance in quick succession, such as encountering work crews. - 6 of 7 watercourses within zone of cumulative impact are drains and remaining 1 has no recorded evidence of Otter.	place during IFI specified period for Class 1 & 2 watercourses.
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.	not result in any impact on adjacent (ex-situ to SAC) riparian habitat. *Spread of invasive aquatic species.* - Impact sources as above. - Not restricted to footprint of works but can be transported upstream or downstream. - Invasive species can compromise bank integrity, riparian structural diversity and riparian invertebrate production. - May result in direct adverse effects on QI habitats and conservation objectives such as distribution and extent of QI habitat, effects to structure and composition of habitat, altered hydrological regime and secondary effects of prey. - SQI [6340], [91J0] and White Clawed Crayfish have conservation objective attributes and targets around preventing negative indicator species. - Potential adverse effects at the 5 no. crossing points as above. - Potential for introduction of invasive species at 1 no. Class 4 drain in Suir catchment.			
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.	*Direct mortality on QI fisheries and other species* - No instream works within watercourses of fisheries value proposed within SAC. *Disturbance/ displacement of QI fisheries and other species within or ex-situ the SAC* - Only 1 watercourse crossing of fisheries value within Suir catchment and works only required within public road pavement. - Maybe very short disturbance to fish utilizing habitat below the bridge. - 1.5km of 110kV UGC within upper headwater tributary of Clodiagh River catchment – frequency of any disturbance is once only. *Direct mortality and disturbance/ displacement of Otter* - Watercourses are present which are hydrologically connected to SAC and there is potential for secondary effects on this QI species both with and ex-situ. - Impact sources as above. - May be sensitive to mortality of foraging/ resting animals from inadvertent collision with moving vehicles or machinery			
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.	(no active holts within 300m of works). - No evidence of Otter found within the regional River Suir SAC catchment.			
- 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 species

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* - culvert replacement works; parapet works; movement of soils and machinery; excavation works; use of hydrocarbons & cement-based compounds; reinstatement works. - Water quality effects due to sedimentation. These effects may be mobilised downstream and affect river reaches at a distance from physical works. - No watercourse crossings within SAC boundary – no potential for direct effects. - 29 no. watercourse crossings located upstream or hydrologically connected to downstream SAC. Only larger crossing at Clare River itself. - 9 no. watercourses subject to parapet works or potential culvert replacement. *Changes to flow regime within or ex-situ SAC* - culvert replacement works; movement of soils and machinery; excavation works; new crossing structures. - Creation of adverse flow conditions or habitat limitations due to changes in flow or morphology will be limited to specific works period	- Measure to ensure mitigation implementation (PD46) - 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 Environmental Management Plan. - Best practice measures including measures which in part avoid/ reduce the likelihood of adverse effects on European Sites. - Monitoring measures	- Sequential or cumulative effects may occur depending on how many watercourse crossings are being worked on simultaneously. - Bilboa River isolated from Clare River – cumulative effects impossible. - 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 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.	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. - Implementation of measures for water quality protection through UWF Grid Connection Surface Water Management Plan. - Duration of any reductions in quality of downstream habitat with regards to QI are temporary, short-term and reversible. - 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
To restore the favourable conservation condition of the following:					
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.	within or adjacent to aquatic habitat. - Potential for altered flow regime likely to affect downstream SAC relates to sources of additional sedimentation at works locations in close proximity to 29 no. watercourses, with increased risk at 9 no. watercourses subject to parapet wall works or potential culvert replacement. - At potential culvert replacement, changes to flow regime will be brief and restricted to location of works area. *Riparian habitat degradation within or ex-situ the SAC* - Impact sources as above. - Magnitude of effects expected to be higher when it occurs within SAC. No watercourse crossings within SAC. - Downstream sediments loads may result in ex-situ effects – potential at 8 no. watercourses where culverts may need to be replaced. *Spread of invasive aquatic species* - Impact sources as above. - Where impacts occur within SAC watercourse, it may			until vegetation has re-established. - Bespoke Invasive Species Management Plan including best practice biosecurity measures.

		result in direct adverse effects to QI habitat, e.g. decline of Killarney Fern. No watercourse crossings within SAC. - Secondary ex-situ impacts on supporting habitat/ species for downstream but hydrologically connected QI.			
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: Slievefelim to Silvermines Mountains SPA (Site code: 004165)

11.7.9. According to the Site Synopsis, the Slievefelim 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 mostly of rough grassland used for hill farming. There is also some deciduous woodland occurring in river valleys.

11.7.10. 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

11.7.11. 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 5 stated that this permission shall not be construed as any form of consent or agreement to a connection to the national grid or to the routing or nature of any such connection.

Previous Grid Connection Application

11.7.12. The Board refused permission for a 110kV substation and underground electric cabling (ABP-301959-18) to connect with the consented windfarm and associated sub-station (PL22.243040). The grid connection was to continue mostly off road through the SPA on lands to the north of the currently proposed grid connection. It

was stated under the reason for refusal that 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.

11.7.13. This proposal would have given rise to the loss of 3.14 hectares of suitable foraging habitat, as well as disturbance resulting from the works within and close to sensitive roosting and breeding habitat, and the Board was not satisfied with the efficacy of proposed measures, such as concealed roads within the SPA to mitigate against habitat loss. The Inspector reporting on this case also made reference to the opinion of the Advocate General on the Grace and Sweetman v An Bord Pleanála case (C-164/17) in assessing the short term loss of suitable foraging habitat and measures proposed to mitigate potential permanent loss of suitable or potentially suitable Hen Harrier Foraging Habitat within the SPA, including the use of concealed access roads. Similar to the conclusion in Case C-164/17, it was considered that the future benefits of certain measures, at the time that the assessment was made, were potential only, and therefore it is not possible for the benefits of such to be foreseen with the requisite degree of certainty.

11.7.14. The Board also stated within its decision that it was not satisfied that sufficient consideration had been provided in relation to the routing of the cable in the local road network, or consideration given of alternative grid connection technologies such as overhead line alternatives. The current proposal now sees the proposed grid connection situated almost entirely underground along the alignment of the R503 Regional Route from a new substation to the north of Newport at Mountphilips to the consented substation at Upperchurch Windfarm. No suitable Hen Harrier habitat within the SPA will therefore be lost with this proposal.

<u>Baseline ecological conditions of the Hen Harrier</u>

11.7.15. The proposed 110kV UGC passes through the Slievefelim to Silvermines Mountains SPA along the public road for a distance of 8km. Mountphilips substation will be located on agricultural grasslands to the west of the Slievefelim/ Silvermines Mountains upland area and outside of the SPA.

11.7.16. Hen Harrier surveys carried out between 2016 and 2019 for the UWF Grid Connection found that all nesting Hen Harrier in the study area were within the SPA.

Nests within 2km of the proposed development (also 3km as a precautionary approach), have been identified for appraisal in this case. There are seven traditional nesting territories up to 2km and a further three within 3km. Only seven of the total of ten were confirmed as active in the 2019 breeding season. The closest active nest in any year to the proposed UWF Grid Connection was at a distance of 600m (2016) and the closest active nest in 2019 was at a distance of 900m. The nearest nest is 4.6km from Mountphilips.

11.7.17. Hen Harrier are central place foragers and most foraging during the breeding season will take place within 2km of nests. Around 43% of land within 2km of the proposed UWF Grid Connection was considered to provide suitable nesting habitat for Hen Harrier. Within 50m of the UWF Grid Connection, only 11% of land is suitable for Hen Harrier nesting. The NIS highlights that there is foraging habitat greater than the threshold[1] of 30% suitable habitat available within the core foraging range of 2km of the nests identified.

11.7.18. In terms of winter roosting, it is noted that only small numbers of communal roost tend to exist at higher altitudes above 100m OD. Suitable roosting habitat is not widely available within 2km of the UWF Grid Connection. During 2016-2018 surveys, the nearest identified roost was at a distance of 2.1km from the UWF Grid Connection.

11.7.19. Fieldwork methodology for Hen Harrier is set out in Section 8.1.8.8 of the EIAR. Breeding season surveys (2016 & 2018; 2019) included vantage point surveys focusing on suitable nesting habitat and historical nest locations. Winter roost surveys carried out during September 2016 to February 2017 and September 2017 to February 2018 were stratified to coincide with dawn and dusk periods. Hen Harrier habitat suitability was identified from mapping and confirmed by a ground-truthing exercise in May 2019. It is noted in the NIS that suitable nesting habitat for Hen Harrier are wet grassland, peatland habitats (including heath), scrub, dense bracken and both pre- and post-thicket forestry (as per Ruddock et al., 2016).

[1] Wilson *et al. (2006)*

Factors that can adversely affect the achievement of conservation objectives

11.7.20. 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 conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Hen Harrier.

11.7.21. 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.

11.7.22. 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). This point was highlighted by Observers James and Tanya Embleton, and Grace and Sweetman. The loss of foraging habitat within 2km of nest locations may result in reduced productivity and/ or nest success. Disturbance and displacement may occur during construction in critical periods of the breeding season or outside of the breeding season at winter roosts. There may be potential for a reduction in prey item species within and ex-situ the SPA.

11.7.23. 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 the 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.

11.7.24. 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 measures to avoid/ reduce land cover change/ potential habitat disturbance or degradation during construction and measures to avoid disturbance to breeding Hen Harrier. UWF Grid Connection works will only be carried out at the Mountphilips site during breeding season (March to August) and the 110kV UGC works will take place from September to October inclusive. Confirmatory breeding surveys will be carried out before works commence and no works will be carried out within 2km of an active Hen Harrier nest. Measures are also included to avoid any disturbance to Hen Harrier at communal winter roosts and to avoid any reduction in prey item species. This will address the concerns of Observers James and Tanya Embleton regarding Hen Harrier foraging during winter. The UWF Grid Connection works will be programmed so as not to take place at the same time UWF Related Works for haul route work on certain local roads, and within 350m of local residences.

11.7.25. 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 UWF Grid Connection, in combination with other plans or projects, to avoid or reduce adverse effects on Hen Harrier to non-significant levels.

11.7.26. The works associated with the proposed development, in combination with other plans or projects, will take place on lands outside the SPA or along an existing public roadway. Habitat within 2km of the windfarm comprises mostly of managed grasslands that are generally of limited use for breeding Hen Harrier. The Mountphilips substation site also comprises managed grassland located outside the SPA and in excess of 4km from the nearest active nest.

11.7.27. 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 is in excess of 4km from the Mountphilips substation site, 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. Hen Harrier will also be less sensitive to disturbance from construction works along a regional road. The proposed development will not therefore have significant effect on the ability of the species to maintain itself on a long term basis. Moreover, 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.

11.7.28. A number of other issues relating to impact on Hen Harrier and other species have been raised by Observers. These issues relating to date of surveys, project splitting and cumulative assessment, attachment of a disclaimer to the NIS, and recent judgements concerning the Habitats Directive have been addressed in Sections 9.6 and 9.7 above. The in-combination effects of the proposed development are also addressed further in Section 11.8.

11.7.29. 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.

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

11.7.30. The Site Synopsis states that this very large site 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.

11.7.31. The UWF Grid Connection is located at the eastern end of the SAC within the Bilboa, Kileengarrif and Newport (Tipperary) river catchments and the Mulkear sub-catchment of the Lower River Shannon SAC. It is noted that floating river vegetation is present throughout the major river systems within the site. 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.

11.7.32. Species listed on Annex II of the Habitats Directive found within the site include Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad and Atlantic Salmon. Rich bryophyte flora has been recorded in the Bilboa River, Mulkear catchment and Otter is also commonly found in the SAC and could be present in larger downstream watercourses.

11.7.33. There is potential for impact pathways between the UWF Grid Connection and the Lower River Shannon SAC, on 'water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation', Atlantic Salmon, Sea Lamprey, Brook Lamprey, River Lamprey and Otter. The Mountphilips substation and 29km of the 30.5km 110kV UGC are located within the Lower River Shannon SAC catchment area and the 110kV UGC is located within the boundary of the River Shannon SAC at six points along public roadways.

<u>Factors that can adversely affect the achievement of conservation objectives:</u>

11.7.34. 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 and Otter.

11.7.35. 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.

11.7.36. 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, or 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 decreases in instream habitat quality; changes in flow regime; riparian habitat degradation; spread of aquatic invasive species; direct mortality of fish and aquatic species, disturbance/ displacement of fish and aquatic species; direct mortality of Otter; and disturbance/ displacement of otter. In an unmanaged situation, impacts could occur from instream works; culvert replacement works; parapet works; movement of soil and machinery; excavation works; use of hydrocarbons and cement-based compounds; and reinstatement. Removal or damage of riparian vegetation has the potential to impact on quality of riparian habitat and in turn watercourse morphology, shading, bank stability and nutrient and sediment loading. Sediment release and adverse water quality impacts can have negative implications for fish and invertebrates due to physical damage, degradation of aquatic habitat, reduced feeding/ foraging and compaction of spawning gravels.

11.7.37. Upperchurch Windfarm/ UWF Related Works are mostly located within the River Suir catchment. No instream works arising from these elements of the Whole UWF Project are required in the Bilboa sub-catchment and therefore the potential for cumulative impact is limited to the Suir catchment. UWF Replacement Forestry is not within the Shannon catchment and other elements of the Whole UWF Project within the Shannon catchment do not require instream works. At a more local level, the spatial extent of habitat quality effects arising from the Whole UWF Project will occur within the footprint of the instream/ culvert replacement works. Fish are likely

to mobilise outside their territories but will return once the disturbance effect minimises.

11.7.38. Mitigation measures for riparian and surface water impacts will include the phasing of excavations, excavation dewatering and any culvert replacement; the use of precast culverts; surface water drainage with check dams; use of silt control measures such as silt fencing and containment berms; carrying out of in-stream works during the specified IFI period and in accordance with best practice (IFI, 2016); isolation of water from works; restriction of construction traffic to construction works area; and refuelling and storage restrictions.

11.7.39. Mitigation measures for protection of otter include the restriction of construction works to daylight hours, confirmatory surveys for active otter holts and prevention of works within 150m of holts or while cubs are present. Best practice methods for the UWF Grid Connection are also proposed for the protection of surface water quality during watercourse crossing works; use of cement based compounds; storage and handling of fuels, oils and chemicals; and minimisation of dust and storage of overburden along Whole UWF Project areas. An Environmental Management Plan addressing surface water quality management, invasive species management and waste management, has also been prepared and will be implemented for UWF Grid Connection. It is noted that Observers Ned & Carmel Buckley expressed concerns regarding the spread of highly invasive species, and this will be addressed within the invasive species management plan. Observers James & Tanya Embleton are concerned with the potential impacts associated with silt and siltation and leaching pollutants and these concerns will be addressed in the Environmental Management Plan.

11.7.40. 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 or sub-stratum. 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 connectively for Otter and mitigation measures will ensure that couching sites are holts are not disturbed.

11.7.41. 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 development 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)

11.7.42. 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. A small section (1.5km of 30.5km) of the UWF Grid Connection is within Suir sub-catchment.

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

11.7.44. There are potential impact pathways from the proposed development site on the qualifying interests of the Lower River Suir SAC, i.e. alluvial forests, 'Taxus baccata woods of the British Isles', 'Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels', 'Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation', Old sessile oak woods with Ilex and Blechnum in the British Isles, Freshwater Pearl Mussel, White-clawed crayfish, Sea/ Brook/ River Lamprey, Atlantic Salmon and Otter.

<u>Factors that can adversely affect the achievement of conservation objectives</u>

11.7.45. The eastern end of the UWF Grid Connection is within the Clodaigh (Tipperary) local waterbody catchment of the Suir sub-catchment of the River Suir catchment. There are five watercourse crossings within this catchment that include four land drains (Class 5) and a Class 2 watercourse identified as providing important juvenile habitat for Atlantic Salmon. Resident Brown Trout populations are also supported in this watercourse.

11.7.46. 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, Salmon and Otter.

11.7.47. 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.

11.7.48. 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. 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; movement of soils and machinery; excavation works; use of hydrocarbons & cement-based compounds; and reinstatement works. Observers James & Tanya Embleton

are concerned with the potential impacts associated with silt and siltation and leaching pollutants.

11.7.49. The nearest Freshwater Pearl Mussel population is located c. 17km downstream from the UWF Related Works in the Clodiagh River (Tipperary); however, the conservations objectives for this species focuses on Clodaigh (Portlaw) population and neither the Clodaigh (Tipperary) nor the Multeen Freshwater Pearl Mussel populations are identified within the conservation objectives. There is no hydrological connectivity with the UWF Related Works and the Clodaigh (Portlaw) in Co. Waterford. There is also potential for hydrological connection with White Clawed Crayfish, Lamprey and Otter, via watercourses. Potential sources of impact include those mentioned above for alluvial woodland and floating river vegetation, as well as the presence of construction personnel and noise and vibration from construction works in proximity to watercourses.

11.7.50. Potential 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.

11.7.51. 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 proposed development 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 proposed works 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.

11.7.52. 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 Lower River Suir SAC.

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

11.7.53. Clare Glen SAC comprises a wooded river valley located on the Limerick – Tipperary border approximately 1.7km to the south-west of the UWF Grid Connection at the townland of Scraggeen.

11.7.54. 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 proposed development site on the qualifying interests of the Clare Glen SAC.

Factors that can adversely affect the achievement of conservation objectives

11.7.55. 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 reductions in water quality or spread of evasive species within or ex-situ the SAC.

11.7.56. 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.

11.7.57. 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.

11.7.58. 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 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. There are 29 no. watercourse crossings proposed for the UWF Grid Connection that are upstream of the Clare Glen SAC.

11.7.59. 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 at 8 no. upstream watercourse crossings. 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.

11.7.60. 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.

11.7.61. 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 Lower River Suir SAC.

11.8. In-Combination Effects

11.8.1. The proposed development is described in planning application documentation as Upperchurch Windfarm (UWF) Grid Connection (110kV UGC). The proposal is one of five elements of the "Whole UWF Project", including the UWF Related Works (ABP-303634-19), which is being assessed concurrently; the Upperchurch Windfarm application granted permission in August 2014 for 22 no. wind turbines; UWF Replacement Forestry; and UWF Other Activities (haul route activities, overhead line activities, Upperchurch Hen Harrier Scheme and monitoring activities).

11.8.2. The Appropriate Assessment Report for the UWF Grid Connection (Screening and NIS and all associated appendices) evaluates the in-combination impacts of the UWF Grid Connection 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; Milestone Windfarm; Rear Cross Quarry; Curraghduff Quarry; Newport Town Park; and forestry/ agriculture turf cutting. These unrelated projects/ activities were scoped in for evaluation of in-combination effects.

11.8.3. Observers Embleton, Buckley and Grace and Sweetman highlight certain concerns with the cumulative impact of the proposal. 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 Replacement Forestry, Upperchurch Windfarm and UWF Other Activities). An evaluation is then carried out for all elements of the Whole UWF Project, and with the Whole UWF Project and the other projects and activities. 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.

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

- UWF Grid Connection works taking place mostly along the route of the existing public road.
- UWF Related Works taking place on the approximate footprint of the permitted Upperchurch Windfarm.
- The separation distance between the zone of overlap between Upperchurch Windfarm and other permitted and operational windfarms.
- Limitation of disturbance/ displacement to footprint of watercourse crossings, which are dispersed between two regional catchment and several local catchments.
- Duration of works at watercourse crossings being mostly be brief and small scale.
- Existing riparian habitat quality within works areas subject to afforestation and agricultural management, including clearance works, drainage management and channelization works.
- Birds likely to be habituated to various background activities such as farming practices, road traffic and maintenance and forestry practices.
- Lands within 150m of construction works area of Whole UWF Project only form a very small proportion of available suitable foraging habitat for Hen Harrier in the wider area.
- Net gain in terms of land managed for use of Hen Harrier.
- Bespoke Invasive Species Management Plan including best practice biosecurity measures.

11.9. Appropriate Assessment Conclusions

11.9.1. Having carried out screening for appropriate assessment of the proposed Upperchurch Windfarm Grid Connection, 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.

11.9.2. 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, the 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.

11.9.3. 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), UWF Related Works, UWF Replacement Forestry and UWF Other Activities, (including Hen Harrier Management Scheme).
- 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.
- No loss of foraging areas for Hen Harrier within the Slievefelim to Silvermines Mountains SPA – proposed Mountphilips Substation is located outside of SPA and 110kV UGC is entirely within the public road. Proposed Upperchurch Windfarm/ UWF Related Works, together with mitigation measures implemented through the Hen Harrier Management Scheme and UWF Replacement Forestry, are all located entirely outside of the SPA.
- The demonstration, 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. The nearest recently active nest is in excess of 4km from the Mountphilips substation site, 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. The locations of the nearest recorded Hen Harrier nests are also in excess of 4km from the UWF Related Works boundary.

- Limitation of disturbance to the footprint of instream works, maintenance of access for aquatic species and no decline in spawning potential.
- The temporary, short-term duration and reversibility of any reductions in quality of downstream habitat with regards to qualifying interests.
- The majority of UWF Grid Connection works taking place in the Shannon catchment and the majority of the Upperchurch Windfarm/ UWF Related Works taking place in the Suir catchment.
- 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.
- Implementation of a bespoke Invasive Species Management Plan including best practice biosecurity measures.

12.0 **Overall Conclusion**

12.1. 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."*

12.2. This is an application to An Bord Pleanála under the provisions of Section 182A of the Planning and Development Act, 2000 (as amended). These works and the concurrent UWF Related Works appeal to the Board are enabling works for a windfarm 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 proposed enabling works should be acceptable and in accordance with the overall policy aims of supporting the sustainable development of wind energy.

12.3. The application for the UWF Grid Connection is assessed both individually and cumulatively within the EIA and Appropriate Assessment with all other elements of the Whole UWF Project including the permitted windfarm and UWF Related Works. 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.

12.4. There is no requirement that planning permission must be obtained for all elements of the project at the same time and therefore individual and cumulative assessments of the elements of an overall project may also be carried out at different times. Baseline survey information in the current case goes beyond what might normally be submitted with a first-time planning application. Surveys 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 2019. I consider that this information is suitably up to date having regard to the lodgement dates of the planning application.

12.5. The main issue with the proposed development relates to Hen Harrier and whether or not the proposed development, in combination with other elements of the Whole

UWF Project and any other relevant plans or projects, will result in significant adverse effects on the integrity of the Slievefelim and Silvermines Mountains SPA. Potential impacts relate to the permanent or temporary reduction or loss of suitable foraging habitat and disturbance/ displacement of foraging Hen Harrier during breeding season.

12.6. The applicant has presented reasonable and reliable scientific evidence to conclude that most foraging activity will take place within one and two kilometres of recorded nests. The nearest recently recorded nests are in excess of 4km from the proposed Mountphilips Substation site and the 110kV UGC will be laid mainly along the R503 Regional Route where it passes through the SPA. Thus, there will be no loss of foraging habitat and habitat within 50m of this road is generally unsuitable for nesting Hen Harrier. Hen Harrier will be habituated to certain background activities such as traffic and there is a large abundance of displacement foraging habitat throughout the SPA.

12.7. Within the Upperchurch Windfarm/ UWF Related Works site, the habitat type comprises mostly of grasslands and mature forestry, and together with the fragmented nature of suitable habitat, mean that foraging habitat within this site is sub-optimal, with habitat within the SPA offering greater suitability. Surveys have also confirmed that the usage of the Windfarm site by Hen Harrier has remained low over a substantial period of time.

12.8. Disturbance and displacement are most likely to occur during construction in critical periods of the breeding season. Construction works during breeding season will only take place at Mountphilips substation and the laying of the 110kV UGC will take place September to February inclusive. Confirmatory Hen Harrier breeding surveys will be carried out at Mountphilips substation site and no works will take place within 2km of identified active Hen Harrier nest during the breeding season. Confirmatory surveys will also be carried out to record any roosting locations within 1km of the UWF Grid Connection, and should any occur, works will be limited to the period between one hour after sunrise to one hour before sunset.

12.9. The Upperchurch Hen Harrier Scheme was prepared to comply with a condition of the permitted windfarm. The loss of Hen Harrier foraging habitat arising from the permitted windfarm was estimated to be 95 hectares and this has been extrapolated

to 98.11 hectares to include the UWF Related Works. The Hen Harrier scheme will provide mitigatory habitat through management of lands for the benefit of Hen Harrier over an area of 128 hectares adjoining the SPA. The proposed mitigatory habitat will exceed the habitat lost from the development of the windfarm and there will be no direct or indirect loss of habitat within the SPA. Observers Grace and Sweetman consider that measures provided in a project aimed at compensating for the negative effects of the project cannot be taken into account in the assessment of the implications of the project provided for in Article 6(3). However, the proposed works in this case, together with any mitigation measures through the Hen Harrier Management Scheme and UWF Replacement Forestry, are all located entirely outside of the SPA, and therefore these measures can be taken into account as part of the Appropriate Assessment carried out in accordance with Article 6(3). The proposed UWF Grid Connection will not result in the loss of any suitable Hen Harrier habitat within the Slievefelim to Silvermines Mountains SPA.

12.10. 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 UWF Grid Connection, the Whole UWF Project and any other relevant plans or projects. As the proposed UWF Grid Connection will enable the development of a permitted windfarm, I am satisfied that these works are acceptable in principle and that the Whole UWF Project complies with local, regional and national policy with respect to renewable energy and climate resilience.

13.0 **Recommendation**

13.1. 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.

14.0 **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 70% of electricity generated from renewable sources by 2030,
- national and local policy support for developing renewable energy, in particular the:-
    - Government's Strategy for Renewable Energy, 2012-2020,
    - National Planning Framework, 2018,
    - Delivering a Sustainable Future for Ireland – the Energy Policy Framework, 2007-2020
    - Climate Action Plan, 2019
    - Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure 2012,
    - 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 purpose of the proposal as enabling infrastructure for the permitted windfarm,
- 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** in terms of the local economy from increased spending and jobs during the construction period.
- Construction phase impacts on Population and Human Health will be mitigated through a range of Project Design Environmental Measures and Best Practice Measures, e.g. construction within 350m of a residence will not take place at the same time as the Upperchurch Windfarm/ UWF Related Works.
- Slight to moderate impacts on **Biodiversity** in terms of aquatic habitat and species from the UWF Grid Connection. Impacts on Hen Harrier will be not significant/ imperceptible and slight positive in terms of habitat enhancement for Hen harrier and general birds. The 110kV UGC take place mostly along the public road and the immediate vicinity of this road is of little use to Hen Harrier. Measures to avoid, prevent or reduce negative effects on Hen Harrier include confirmatory surveys and control of construction works close to breeding/ resting places. In terms of cumulative assessment, there will be moderate positive impacts on Hen Harrier, general birds and terrestrial habitat from the planting of trees as part of the Upperchurch Hen Harrier Scheme.

  Two bats roosts in bridges that could be affected by the UWF Grid Connection works are considered to be of negligible importance. Project design measures incorporated into the development includes pre-construction surveys of bridges, exclusion procedures and provision of alternative roosting opportunities under derogation from the NPWS.

  Evidence of otter was found in close proximity to 3 identified crossings; however, no holts or resting places occur and works will take place during daylight hours and from the surface of the bridge only.

  In addition to Project Design Environmental Measures and Best Practice Measures, an Environmental Management Plan developed for the proposal will include a Surface Water Management Plan and Invasive Species Management Plan.

- Potential cumulative impacts to local surface **Water** bodies in relation to surface water quality impacts and impact to local water dependant habitats. However, the majority of in-stream works in the Whole UWF Project works area are within drains or marginal watercourses and there is little potential for pathways to the Lower Shannon SAC. Most of the watercourse crossings along the UWF Grid Connection are already culverted and local surface water quality effects will be localised. Watercourses to be crossed throughout the Whole UWF Project area are distributed over a large geographical area and within the River Shannon and River Suir catchments.

  Project Design Measures and detailed best practice measures such as the requirement that works will be in compliance with IFI guidance, implementation of a sediment controls and other drainage measures, and measures relating to the handling and storage of fuels, oils, chemicals and overburden will ensure that there will be no significant effects on water. An Environmental Management Plan that includes a Surface Water Management Plan will also provide a framework for water quality protection.

- Positive cumulative impacts on **Climate** from the Whole UWF Project due to the production renewable wind energy and a reduction in the use of fossil fuels.

- Potential impacts in terms of **Material Assets (Roads)** during the construction phase include damage to road pavements and increase journey times for road users arising from construction works and construction deliveries to the site. Impacts will be mitigated through implementation of a traffic management plan that will include measures to maximise road safety and traffic free flow.

- Potential impacts on **Cultural Heritage and the Landscape** will be mitigated during the construction stage through archaeological monitoring of ground works and agreement with the Department of Culture, Heritage and the Gaeltacht in relation to parapet works to bridges listed in the NIAH. The overall visual impact of the Whole UWF Project from sensitive locations, including designated viewpoints, is evaluated as imperceptible to slight. The main visual impact will be from the turbines themselves. These were assessed in the original EIA, where it was accepted that the development will not change the visual character of the area to a significant degree.

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.

15.0 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, 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.	The mitigation measures contained in the Natura Impact Statement which was submitted with the application shall be implemented in full. **Reason:** In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of European Sites.
3.	a) No additional artificial lighting shall be installed or operated on site unless authorised by a prior grant of planning permission. b) The substation and all related ancillary structures shall be dark green in colour. **Reason:** In the interests of clarity, and of visual and residential amenity
4.	a) During the operational phase of the proposed development, the noise level arising from the development, as measured at the nearest noise sensitive location shall not exceed: (i) An LAeqT value of 55 dB(A) during the period 0800 to 2200 hours from Monday to Saturday inclusive. [The T value shall be one hour.] (ii) An LAeqT value of 45 dB(A) at any other time. [The T value shall be 15 minutes]. The noise at such time shall not contain a tonal component. At no time shall the noise generated on site result in an increase in noise level of more than 10 dB(A) above background levels at the boundary of the site. b) All sound measurement shall be carried out in accordance with ISO Recommendation R 1996 “Assessment of Noise with respect of Community Response” as amended by ISO Recommendations R 1996 1, 2 or 3 “Description and Measurement of Environmental Noise” as applicable.

	Reason: To protect the amenities of property in the vicinity of the site.
5.	The developer shall retain the services of a suitably qualified and experienced bird specialist to undertake appropriate surveys of this site for the Hen Harrier. Details of the surveys to be undertaken shall be submitted to, and agreed in writing with the planning authority prior to commencement of development. **Reason:** To monitor the impact of the development on the local population of the Hen Harrier.
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.	Details of landscaping around the proposed Mountphilips substation and alongside the proposed access roadway to the substation, shall be submitted to and agreed in writing with, the planning authority, prior to commencement of development. **Reason:** in the interest of landscape and visual amenity.
8.	All works to protected structures, their curtilage and within their setting shall be supervised on an ongoing basis by a Grade I or II Conservation Architect and undertaken in accordance with the conservation principles contained in the Architectural Heritage Protection Guidelines for Planning Authorities, Oct. 2011. **Reason:** To protect the architectural heritage on the area.
9.	The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of

	archaeological materials or features which may exist within the site. In this regard, the developer shall: a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, and b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works. The assessment shall address the following issues: • the nature and location of archaeological material on the site, and • the impact of the proposed development on such archaeological material. A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works. In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination. **Reason:** In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.
10.	Detailed measures in relation to the protection of bats at bridge crossings shall be submitted to and agreed in writing with the planning authority, prior to commencement of development. These measures shall be implemented as part of the development. Any envisaged destruction of structures that support bat populations shall be carried out only under licence from the National Parks and Wildlife Service and details of any such licence shall be submitted to the planning authority.

	Reason: In the interest of wildlife protection.
11.	All proposed entrance/ access points with the public road network shall comply with the detailed standards of the planning authority for such road works. **Reason:** In the interests of amenity and of traffic safety.
12.	Water supply and drainage arrangements, including the disposal of surface water and wastewater, shall comply with the requirements of the planning authority for such works and services. **Reason:** In the interest of public health.
13.	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.
14.	All road surfaces, culverts, bridges, watercourses, verges and public lands shall be protected during construction and, in the case of any damage occurring, shall be reinstated to the satisfaction of the planning authority. Prior to commencement of development, a road condition survey shall be taken to provide a basis for reinstatement works. Details in this regard shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. **Reason:** In order to ensure a satisfactory standard of development.
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

30th September 2020