



An  
Bord  
Pleanála

## Inspector's Report

### ABP-303634-19

Development	Appeal against Refusal for Planning Permission to develop Upperchurch Windfarm (UWF) Related Works.
Location	Various Townlands near Upperchurch County Tipperary
Planning Authority	Tipperary County Council
Planning Authority Reg. Ref.	18600913
Applicant(s)	Ecopower Developments
Type of Application	Permission
Planning Authority Decision	Refuse permission
Type of Appeal	First Party
Appellant(s)	Ecopower Developments
Observer(s)	<ol style="list-style-type: none"><li>1. Ned &amp; Carmel Buckley</li><li>2. James &amp; Tanya Embleton</li><li>3. Peter Sweetman with and on behalf of Paul &amp; Edel Grace</li><li>4. Emer Ó'Siochrú &amp; Toal Ó'Muiré</li></ol>

Date of Site Inspection

20<sup>th</sup> May 2020

Inspector

Donal Donnelly

## Contents

1.0 Introduction.....	6
2.0 Site Location and Description .....	6
3.0 Proposed Development .....	7
3.4. Accompanying documents:.....	9
4.0 Planning Authority Decision.....	9
4.1. Decision .....	9
4.2. Planning Authority Reports .....	10
4.3. Prescribed Bodies.....	20
4.4. Third Party Observations .....	21
4.5. Applicant Response .....	22
5.0 Planning History.....	24
5.1. Subject site.....	24
5.2. Nearby windfarm applications considered for cumulative assessment .....	26
5.3. Other Nearby Windfarm Applications .....	28
6.0 Policy Context.....	29
6.1. National Framework Plan, 2018.....	29
6.2. Regional Spatial & Economic Strategy for the Southern Regional, 2020 ....	30
6.3. North Tipperary County Development Plan, 2010 (as varied).....	30
6.4. Climate Action Plan, 2019.....	32
6.5. National Adaption Framework, 2018 .....	32
6.6. Natural Heritage Designations .....	32
7.0 The Appeal .....	33
7.1. Grounds of Appeal .....	33
7.5. Observations .....	38

8.0 Assessment.....	40
9.0 Planning Assessment .....	40
9.6. Validity, procedural and legal issues .....	42
9.7. Policy Context/ Development Principle .....	45
9.8. Other issues raised in submissions.....	47
10.0 Environmental Impact Assessment .....	48
10.1. Introduction.....	48
10.2. EIAR Content and Structure .....	49
10.3. Reasonable Alternatives .....	51
10.4. Likely Significant Effects on the Environment .....	52
10.5. Population and Human Health .....	52
10.6. Biodiversity .....	56
10.7. Land, Soil, Water, Air and Climate.....	76
10.8. Material Assets .....	98
10.9. Cultural Heritage and the Landscape.....	102
10.10. Vulnerability of the Project to Major Accident and/ or Natural Disaster .	107
10.11. Cumulative Impacts & Environmental Interactions .....	108
10.12. Reasoned Conclusion.....	110
11.0 Appropriate Assessment .....	114
11.3. Geographical Scope and Main Characteristics .....	114
11.4. Screening the need for Appropriate Assessment.....	116
11.5. The Natura Impact Statement and Associated Documents .....	124
11.6. Appropriate Assessment of implications of the proposed development on each European Site .....	128
11.7. In-Combination Effects.....	161

11.8.	Appropriate Assessment Conclusions .....	163
12.0	Overall Conclusion .....	165
13.0	Recommendation .....	167
14.0	Reasons and Considerations .....	168
15.0	Conditions .....	174

## 1.0 Introduction

- 1.1. A first party appeal against Tipperary County Council's decision to refuse permission for development described as 'Upperchurch Windfarm (UWF) Related Works' has been submitted to the Board by Ecopower Developments Ltd. The purpose of UWF Related Works is to enable the development of Upperchurch Windfarm that was permitted by the Board in 2014 (PL22.243040). A concurrent application has been submitted to the Board for the UWF Grid Connection (ABP-306204-19).

## 2.0 Site Location and Description

- 2.1. The appeal site is located in mid-western Co. Tipperary within the Upperchurch and Foilnaman Electoral Divisions. The villages of Upperchurch and Kilcommon are approximately 2km to east and west of the site respectively. Thurles is approximately 17km to the east and Newport is approximately 20km to the west. The R497 and R503 Regional Routes are located to the south and there is a network of local roads around the site.
- 2.2. The surrounding area is characterised by upland rolling hills and valleys to the east of the Slievefelim and Silvermines Mountains. The consented Upperchurch Windfarm (UWF) element of the Whole UWF Project is situated around a number of foothills of the wider range of hills and mountains to the east. The surrounding hills include Knockavilloge (364m OD) and Knockmaroe (411m OD), as well as three other hills at Knockcurraghbola Commons, Graniera and Shevry townlands with heights of 376m, 377m and 361m OD respectively. The highest mountains in the wider area are Mother Hill (543m OD) approximately 7.5km west, and Keeper Hill (694m OD) approximately 12km north-west of the proposed windfarm site.
- 2.3. The main river in the vicinity of the windfarm site is the Owenbeg to the south-east, which is in the Clodiagh River sub-catchment and the River Suir catchment. To the west, the proposed grid connection crosses the Bilboa River, a tributary of the Mulkear River, which in turn enters the Shannon to the east of Limerick. There are also a number of other watercourses between the turbine locations that drain to both the Suir and Shannon catchments.

- 2.4. To the south-east of the windfarm, a cluster of eight permitted turbines (T1-8) will be positioned around an afforested hill in the townland of Shevry and along a mountain (377m OD) in the townland of Graniera. The main entrance to the permitted windfarm will be located off the R503 to the south of the site. The existing Milestown windfarm comprising 6 no. turbines is immediately to the west of this cluster.
- 2.5. At the north-eastern extent of the proposed development, the windfarm will continue around the southern slopes of Knockavillogue (364m OD) within the townland of Knocknamena Commons; the northern slopes of the mountain are afforested including a part of the development site. There is a cluster of eight permitted wind turbines (T9-16) in the vicinity of Knockavillogue. The Éamonn an Chnoic (Ned of the Hill) Loop walking route passes through this part of the site.
- 2.6. The western cluster of turbines (T17-21) are aligned roughly from south to north over Knockmaroe between the afforested eastern and western sides of this mountain. This part of the windfarm also overlaps with the grid connection application boundary along the R503. The central cluster of the windfarm contains a single turbine (T22) and the consented UWF substation. The grid connection application boundary continues up to the consented substation.
- 2.7. The stated area of the UWF Related Works site is 70.9 hectares. The application site extends approximately 6.85km from north-east to south-west, and by 4.1km from north-west to south-east. The main land uses in the area are hill farming and forestry.

### 3.0 Proposed Development

- 3.1. The proposed development is intended to facilitate the construction and operation of the already consented (but not built) Upperchurch Windfarm (Reg. Ref: 13/510003 & PL22.243040). The proposal is referred to as Upperchurch Windfarm (UWF) Related Works and will consist of the following:
  - a) 17.9km of internal windfarm cabling (approx. 62% located under consented or realigned windfarm roads);
  - b) Haul route works at 13 locations to facilitate the haulage of turbine components to the Upperchurch Windfarm 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 Upperchurch Windfarm roads and to provide access to the telecoms relay pole;
- e) 1 no. change of use of an existing 'agricultural' entrance to 'agricultural and forestry' entrance; and
- f) Ancillary works including 14 temporary site entrances; 5300m of temporary access road; temporary and permanent watercourse crossings, involving 24 small field drains and eight streams; drainage systems around permanent features and temporary drainage around works areas; 0.3 hectares of forestry to be felled; temporary and permanent hedgerow/ tree removal; temporary and permanent fencing; bat crossing structures; temporary storage or permanent placement in berms of 11,830 m<sup>3</sup> of excavated material; and reinstatement of roadside boundaries and public road surfaces.

3.2. The application is for a 10-year permission, under Section 41 of the Planning and Development Act, 2000, as amended. 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.

3.3. The proposed development (UWF Related Works), is one of five elements of the Whole UWF Project comprising the following:

- Element 1: UWF Grid Connection (concurrent SID case: ABP-306204-19);
- Element 2: UWF Related Works (current appeal);
- Element 3: UWF Replacement Forestry (concurrent forestry licence application to Department of Agriculture, Forestry and the Marine);
- Element 4: Upperchurch Windfarm (PL22.243040) granted by the Board on appeal in August 2014;
- Element 5: UWF Other Activities (no planning required).



### 3.4. **Accompanying documents:**

- Volume A: Planning application documents – Application form, site/ newspaper notice, letters of consent, schedule of submitted documents, etc.
- Volume B: Planning Drawings
- Volume C: Upperchurch Windfarm (UWF) Related Works EIAR **(Revised)**
  - 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 Related Works **(Revised)**
- Volume E: Appropriate Assessment Reporting **(Revised)**
- Volume F: Reference documents for other elements of the Whole UWF Project
  - Volume F1 to F3: UWF Grid Connection EIAR
  - Volume F4: Environmental Management Plan for UWF Grid Connection
  - Volume F5 to F7: 2018 UWF Replacement Forestry EIAR
  - Volume F8 to F9: Upperchurch Windfarm
- Response to request for further information received by Planning Authority on 9<sup>th</sup> November 2018

## 4.0 **Planning Authority Decision**

### 4.1. **Decision**

- 4.1.1. Tipperary County Council issued notification of decision to refuse permission for two reasons. Under the first reason, it is considered that the applicant has failed to demonstrate that the development of the site would not have an adverse impact on the integrity of the Slievefelim to Silvermines SPA having regard to the level of relevant survey information lodged in relation to the baseline ecological conditions of the Hen Harrier. It cannot therefore be ruled out beyond all reasonable scientific

doubt that the proposed development would not lead to a reduction or loss of foraging habitat for the Hen Harrier.

- 4.1.2. The second reason refers to the EIA carried out on this application and states that the Planning Authority is not satisfied that the proposed development, alone or in combination with other projects, would not result in significant residual negative impacts on the environment with respect to biodiversity, including Hen Harrier and bat species.

## 4.2. Planning Authority Reports

- 4.2.1. The recommendation to refuse planning permission in the final Planner's Report reflects the decision of the Planning Authority. It is also considered by the decision maker that the Planner's Report appended with the EIA and Appropriate Assessment contains a fair and reasonable assessment of the likely significant effects of the development on the environment and the likely nature conservation implications of the development of Natura 2000 sites.
- 4.2.2. Issues covered under the appraisal of the proposed development within the initial Planner's Report dated **6<sup>th</sup> September 2018** include policy compliance, design/layout, services, Environmental Impact Assessment and Appropriate Assessment.
- 4.2.3. In terms of policy compliance, it is noted that the application relates to works to facilitate an already assessed and permitted windfarm development. The policy assessment of the Development Plan took both existing and permitted turbines into consideration and it is highlighted that the proposal is largely within areas open for consideration in the adopted Wind Energy Strategy.
- 4.2.4. The proposed telecom relay pole is not considered to detract from the visual or residential amenities of the area, and it is stated that the proposal does not consist of any substantial structural elements.
- 4.2.5. With respect to services, the District Engineer advised that further information should be sought on sightlines affecting the proposed haul routes. A surface water management plan accompanies the planning application; any run-off from the related works construction area will be contained and treated by the windfarm drainage.

4.2.6. The following is a summary of the main points raised in the Planner's Report concerning the EIAR submitted with the application:

- **Scoping** – competent experts relied on the effects of the consented windfarm.
- In the event of any new impact pathway being identified during scoping for cumulative receptors, it was examined for consented windfarm also so that cumulative impact for whole project could be determined.
- Permitted windfarm has been subject to EIA process which was found to be in accordance with the proper planning and sustainable development of the area. EIS submitted as part of 2013 application and subsequent An Bord Pleanála EIA relied upon – statement regarding impact of time required.
- **Reasonable alternatives** – project specific (haul routes, locations for telecom pole, layout of internal cables, realigned wind farm roads) but considered reasonable.
- Description of proposed development is considered reasonable.
- **Population** - Considered that there are no likely significant effects to population – cumulative impact was also considered.
- **Human health** - considered local residents and community, Kilcommon National School and transient people – measures to avoid, prevent or reduce impacts including the protection of local water supply, limiting construction hours and road safety measures are considered acceptable.
- **Biodiversity** – 10 sensitive aspects of environment assessment include European Site, National Sites, aquatic habitats and species, terrestrial habitat, Hen Harrier, general bird species, bats, non-volant mammals, amphibians and reptiles and Marsh Fritillary.
- Surveys recorded that there was no suitable breeding habitat and no suitable winter roost for Hen Harrier. Application documents state that reduction or loss of suitable habitat for Hen Harrier is slight.
- Four locations recorded for Marsh Fritillary but outside the construction area works boundary. Surveys state that habitat loss will be slight (5-20% of total).
- Meadow pipit was recorded in the area (red listed species).

- 25 project design environmental protection measures are provided for in the proposed works to avoid, prevent or reduce negative effects on biodiversity.
- Silvermines to Slievefelim SPA is adjacent to western boundary of permitted Turbines T17 to T21. Windfarm replacement forestry located entirely outside the SPA.
- Upperchurch Windfarm is the subject of a Hen Harrier management plan as part of 2014 permission.
- Haul route activities located outside of SPA – by their nature, these locations do not comprise or include foraging or breeding habitat for Hen Harrier.
- 0.027 hectare of scrub is only location where construction works boundary overlaps SPA – no land use change will take place at this location to avoid effects on habitat possibly suitable for Hen Harrier.
- 2013 further information response calculated magnitude of foraging habitat loss at 95 hectares for Upperchurch Windfarm – area of 98.11 hectares has been extrapolated from this data to include current application for UWF Related Works. Overall significance of impact is neutral residual and rationale for impact evaluation has been positive.
- With respect to Appropriate Assessment, the Planner's report concludes that in light of conservation objectives, potential effects exist as a result of the Whole UWF Project – these potentially significant effects have been evaluated, and with implementation of additional mitigation measures in respect of Otter, the Whole UWF Project, alone or in combination, will not result in any effects to the integrity of the European Sites under consideration, having regard to their respective conservation objectives, in circumstances where no reasonable scientific doubt remains.
- The biodiversity chapter of the EIAR is noted and considered acceptable – direct and indirect effects of habitats protected under the Habitats and Birds Directives have been provided, including residual impacts in respect of biodiversity.
- **Land** – main effect relates to loss of connectivity between parcels of land due to construction works – considered no likely impacts will occur but further information on land take should be provided.

- **Soils** – Mitigations measures set out in EIAR to ensure there is no potential impacts due to the location of the UWF Related Works – overall conclusion of no significant negative effects on Lower River Suir SAC from the proposed works. Considered acceptable by Case Planner.
- **Water** – Flood Risk Assessment undertaken for the Whole UWF Project. List of project design environmental protection measures are built into the design of the UWF related works to avoid, prevent or reduce negative effects to water. Phased approach will be undertaken so that only one potential sediment producing activity (watercourse crossing works, earthworks, forestry felling, excavation dewatering) will be carried out within 50m of a Class 1 or Class 2 watercourse at any one time.
- Drainage of Marsh Fritillary habitat is considered imperceptible due to mitigation measures, suitable habitat upslope of the two relevant cable trench sections; and cabling will be within permanent windfarm access roads and any effects on drainage will be temporary and reversible.
- **Air** – Increase in dust on local residents and community is considered slight and noise is considered moderate. Increase in electromagnetic fields and interference with electric equipment is considered imperceptible. This chapter is noted and considered acceptable.
- **Climate** – overall project will have a positive impact from renewable electricity produced – noted and considered acceptable.
- **Material assets: built services** – there will be a neutral impact to local residents and community and no significant cumulative effects – noted and considered acceptable.
- **Material assets: roads** – there will be 14 temporary entrances off public roads for internal windfarm cabling trenching works. Nine separate cable crossings of public roads will also be required. Haul routes will require temporary removal of 1035m and permanent removal of 25m of road boundary. Traffic management plan will control and minimise traffic impacts. Considered neutral and this is noted and accepted.

- **Cultural heritage (archaeology)** – Slight impact from removal of small sections of townland boundary (temporary removal of c. 55m at 12 townland boundaries and c. 15m at three townland boundaries) along route of internal windfarm cabling, haul route works and realigned windfarm road locations – mitigation measures incorporated and no additional significant adverse impacts likely to occur. Noted and considered acceptable.
- **Landscape** – Cumulative impact with permitted windfarm considered slight and imperceptible. When cumulative impacts of UWF related works with grid connection, replacement forestry, other windfarms and communications infrastructure, forestry and agricultural activities are considered, cumulative effects will not be significant. Comment of Board’s report on permitted windfarm considered relevant. Noted and considered acceptable.
- **Interaction** – There are no effects on one environmental factor likely to cause significant indirect effects on another – noted and considered acceptable.
- **Monitoring** – Environmental Management Plan, Traffic Management Plan, Surface Water Management Plan, Invasive Species Management Plan and Waste Management Plan all have been prepared. Environmental commitments will be monitored by Environmental Clerk of Works. Noted and considered acceptable.

4.2.7. It is concluded that the EIAR relies upon the 2013 EIS and EIA in the presentation of cumulative impacts. The Case Planner considers that the applicant should be requested to consider the impacts on the time since its collation and assessment of same and to provide any updates and revisions accordingly. The applicant should also be requested to provide a schedule of features/ measures to avoid, prevent or reduce adverse effects on the environment and a schedule of monitoring measures, as the Planning Authority cannot complete the EIA pending receipt of same.

4.2.8. The following is a summary of the main points raised in the Planner’s Report concerning Appropriate Assessment:

- Only the Lower River Shannon SAC, Lower River Suir SAC and Slievefelim to Silvermines SPA have been considered for Appropriate Assessment and other European Sites within 15km of the site have been screened out – this is considered reasonable.

- Upperchurch Windfarm is not included in the list of project elements which are screened in as part of the assessment of the effect of the development on the SPA and its qualifying species (Hen Harrier). If windfarm and replacement forestry are screened out, the cumulative impact assessment is incomplete.
- Disturbance of otter is considered as likely to be significant in relation to the grid connection.
- Excluding the UWF Replacement Forestry and Upperchurch Windfarm itself from Stage 2 Appropriate Assessment in close proximity to the SPA does not allow for cumulative impacts to be properly assessed.
- Upperchurch Windfarm has been subject to appropriate assessment; however, it is directly relevant to the cumulative assessment for the purposes of carrying out a comprehensive assessment and the potential effects on the SPA and its conservation objectives.
- Applicant should be required to address the issue of screening out of UWF Replacement Forestry and windfarm itself.

- 4.2.9. Further information was requested from the applicant relating to apparent inconsistencies within the NIS in terms of the consideration of potential impacts including cumulative impacts. In particular, the applicant was requested to address the issue whereby replacement forestry and the windfarm itself have been excluded from Stage 2 Appropriate Assessment.
- 4.2.10. The Planning Authority was also not satisfied as to the completeness of the EIAR in terms of the impact of time since the collation and assessment for the EIS and EIA accompanying the 2013 application. The provision of updates and revisions are requested as further information.
- 4.2.11. Finally, the applicant is requested to provide a schedule and accompanying road network map of public roads impacted by haulage operations and construction traffic. New/ amended entrances were also requested, together with proposals for contribution or upgrade of the junction of the R497/ L2264-50/ R503.
- 4.2.12. The further information submitted by the applicant was assessed in a subsequent Planner's Report dated **10<sup>th</sup> January 2019**. Tipperary County Council engaged the services of consultants to prepare an Environmental Impact Assessment and

Appropriate Assessment of the proposed development. The main points raised in the Planner's Report are summarised as follows:

- Response to first further information item states that there is adequate information provided to facilitate the competent authority including assessment of in combination effects. Response does not provide any new information and no revised NIS has been submitted.
- Response to second item relating to EIA states that there are no material changes in the baseline environment since the Board carried out an EIA for the Upperchurch Windfarm application.
- Response to third item states that 43 project design environmental protection measures are included in the application, together with monitoring measures throughout the EIAR and EMP. Only one compensatory measure proposed in the form of bat boxes to replace trees felled.
- Response to the fourth item provides a schedule of roads impacted by haulage operations and construction traffic. No works are required at the junction of the R497/ L2264-5-/ R503.

4.2.13. The following points are contained in the EIA and AA prepared by the external consultants:

#### EIA

- Further clarification required to determine whether proposed development and project will have a significant effect on biodiversity.
- No details of dates when badger surveys were carried out.
- Confirmation on whether bat activity/ transects were used and methodology for screening out bridges along cable route for potential bat roosts. Clarification on other details regarding roosting sites, derogation licencing, bat boxes, habitat management plan, hedgerow planting, etc.
- As a condition of planning, all measures recommended in the EIAR and NIS must be carried out in full.
- Clarification if Hen Harrier uses lands outside of SPA but within the whole UWF project boundary as hunting habitat.



- Quantum of residential receptors referred to in EIAR chapters conflicts with those on mapping submitted.
- Design measures are insufficient.

#### Appropriate Assessment

- Further clarification to determine whether proposal will have a significant effect on European Sites.
- Upperchurch Windfarm was screened in regarding in-combination effects but this element of the project not listed in Table 5.1.
- Replacement forestry was excluded from Stage 2 but was included in the assessment or in-combination effects – should have been screened in at Stage 1.
- Castlewaller should be included for cumulative assessment regarding loss of foraging habitat/ disturbance for Hen Harrier.
- NIS concludes that there will not be significant effects on Hen Harrier due to project design and best practise measures – assessment is focused on lands and habitats solely within the SPA.

4.2.14. The following points are raised under the assessment of the application in the Planner's Report:

#### EIA

- Sensitivity rating of Hen Harrier is very high and therefore up to date surveys are required to assess the potential level of impact to a high degree of certainty – applicant's response does not address the concerns to the satisfaction of the Planning Authority.
- Schedule of measures to avoid, prevent, reduce or offset the effects remains unchanged from the previous submitted.
- Environmental Protection Measures relating to Hen Harrier (surveys in advance of breeding and confining works to one hour before/ after sunrise/ sunset), are sufficient to prevent mortality but disturbance is also a consideration, as well as foraging habitat loss up to 2km of nesting.

- Potential for effects on Hen Harrier due to reduction/ loss of foraging habitat outside the SPA from disturbance/ displacement of nesting/ roosting from noise and human activity during construction and operational phases without adequate assessment of lands on the western boundary close to the SPA.
- Measure regarding hedgerow removal is a requirement under national legislation (Wildlife Act, 1975) that hedgerows are not cut or removed during bird nesting or breeding season – this measure should be strengthened to give meaningful effect.
- Potential impacts on biodiversity are not fully examined to determine level of impact – assessment carried out by external consultants has outlined shortfalls in relation to badgers, bats and Hen Harrier.
- There are lacunae in terms of management of run-off in the water chapter.
- Optimum survey period for Hen Harrier is summer months –survey information in EIAR is deficient.
- Full consideration of the cumulative impact between the UWF project and the Castlewaller windfarm is required – assessment incomplete having regard to potential Hen Harrier hunting/ foraging.
- Effects in relation to bats has not been accurately evaluated and screening out of bridges as potential bat roosts in the EIAR is questioned, (only 3 of 32 bridges surveyed). Compensatory measures relate only to trees and not bridges or the potential site offices.
- There are gaps in the information regarding badger surveys.
- Reasoned conclusion identifies the water quality and biodiversity as the main significant effects. Water quality impacts can largely be mitigated by a range of project design environmental measures; however, drainage infrastructure to manage contaminated run-off from temporary access road is additional mitigation measure that is required. There is potential for direct impacts on bat species, Hen Harrier in terms of surveys and mitigation measures – significant residual impacts would therefore remain.

### Appropriate Assessment

- Response received in relation to the screening out of the windfarm itself is not considered acceptable – not included in the list of project elements which are screened in as part of the assessment of the effect of the development on the Slievefelim to Silvermines SPA.
- Other elements have been screened in depending on the potential source of impact alone or in combination with other project elements, plans or projects, e.g. grid connection.
- If replacement forestry is considered in Stage 2, it should have been screened in at Stage 1. Overlap between Hen Harrier foraging habitat and UWF Replacement Forestry should be addressed.
- Failure to adequately assess the potential use of areas used by the Hen Harrier outside the SPA and possible effects means that the full extent of effects of the development remain unknown.
- Hen Harrier will forage up to c. 5km from the nest site – there is potential for indirect impacts from reduction or loss of foraging habitat and construction impacts on Hen Harrier have been understated as there will be disturbance to prey species (meadow pipit).
- If mitigation is required in terms of a replacement of hunting habitat, regard must be had to Grace and Sweetman V An Bord Pleanála (C-164/17) – only when it is sufficiently certain that a measure will make an effective contribution to avoiding harm, guaranteeing beyond all reasonable scientific doubt that the project will not affect the integrity of the area that such a measure may be taken into consideration when appropriate assessment is carried out.
- The overall conclusion is that the NIS does not address the potential permanent loss of habitat outside the SPA – only loss of potentially suitable habitat for Hen Harrier within the SPA is evaluated. Not therefore possible to complete a full Appropriate Assessment. In addition, submitted Appropriate Assessment is inconsistent in terms of the consideration of impacts – Upperchurch Windfarm has been subject to AA; however, it is directly relevant to the cumulative assessment for the purposes of carrying out a comprehensive assessment of this

development and the potential effects on the integrity of the SPA and its conservation objectives, namely Hen Harrier.

#### 4.3. **Prescribed Bodies**

##### Inland Fisheries Ireland

- 4.3.1. IFI's principle concern relates to the protection of instream and riparian habitat and the water quality of all watercourses on and bounding the proposed site. It is stated that the requirements of the Water Framework Directive are to be adhered to and that mitigation measures and control shall be put in place by way of condition.

##### Department of Culture, Heritage and the Gaeltacht – Archaeology

- 4.3.2. Heritage related observations/ recommendations were received from the Department of Culture, Heritage and the Gaeltacht relating to archaeology. It is noted that only one recorded monument (TN039-046) is within the confines of the development area and the Department concurs with the archaeological recommendations outlined in the EIAR. A number of conditions are also recommended to be attached in the event of a grant of permission.

##### Department of Culture, Heritage and the Gaeltacht – NWPS

- 4.3.3. The Department submitted the following comments in relation to further information Item 1 received, and specifically the need for the NIS to avoid the exclusion of the Upperchurch Windfarm itself from the Appropriate Assessment:
- Noted that all turbines of the permitted wind farm part of the project are more than 250m outside the boundaries of the SPA.
  - NIS for current application concludes that all hunting habitat loss occurs outside the SPA.
  - Note that any suitable habitat within 250m of an operational turbine is considered to be avoided by hunting Hen Harrier due to disturbance displacement, based on an interpretation of the available scientific evidence.
  - NIS has not considered whether Hen Harriers which breed within the SPA require to use the hunting habitat outside the SPA boundary (such as the habitat within the proposed windfarm) – if so, they may not be able to feed their young without

it, and consequently, may not be able to maintain the population of the SPA. NIS has not considered this sufficiently.

- Key question is the extent to which the Hen Harriers breeding within the SPA are dependent upon any suitable hunting habitat within the site of the proposed windfarm.
- EIAR states that several Hen Harrier nest locations were within 1km of the construction boundary – where they within the SPA? Is there sufficient hunting habitat within the adjacent parts of the SPA to provide for nesting pairs or will nesting pairs within the SPA rely on hunting habitat, for which mitigation is required, within the windfarm?
- If summary of recorded use by Hen Harrier of hunting habitat within the proposed windfarm is compiled, does it indicate significant use by Hen Harrier on the western side of the proposed windfarm which may indicate some discrepancy on the hunting habitat available there?

#### **4.4. Third Party Observations**

4.4.1. A total of six observations were received by the Planning Authority. Four of the observers also made observations on the appeal. Issues raised with the Planning Authority that were not included in the submissions to the Board include the following:

- Reduction in tourism and tourism potential – visual impact on the landscape.
- Proximity to Upperchurch School and associated noise impact.
- Development requires compensatory measures to be adopted – Appropriate Assessment cannot be carried out under Article 6.3.
- Proposal to set aside land to compensate for habitat loss is not allowed since the Keeper Hill case.
- Objects to the number and proximity of turbines and substation to residential property.
- Ecological surveys are out of date. Noise assessment based on out of date standards.

- Spread of TB and Japanese Knotweed.
- Impact on the commercial viability of Eco Farm Visitor Centre and accommodation.
- Planning Authorities and the Waddenzee judgement – requirement for modifications to existing plans and projects to be captured by Appropriate Assessment requirements.
- Scoping assessment – should not screen out windfarm itself as having been assessed previously.
- Loss of habitat to marsh fritillary butterfly, golden plover and meadow pipit – no mitigation proposed in relation to habitat loss.
- Cumulative impact in relation to the EIS has not been adequately described, reported or analysed.
- Impact on climate does not take account of cost of wind energy in Ireland and the lack of significant reduction in emissions.
- Reg. Ref: 15/601088 was refused for reasons relating to cumulative impact.

#### 4.5. Applicant Response

4.5.1. The applicant responded to the issues raised by 3<sup>rd</sup> parties with the following comments (Volume C4: Revised EIAR Appendices):

- A number of points raised relate to the windfarm for which planning permission has already been granted.
- Displacement of badger or deer during construction is not likely to be significant, primarily due to works during daylight hours, the short duration of works and distance to badger setts.
- Invasive species management plan will ensure that any infestations are contained.
- No significant effects on water are likely to occur as a result of UWF Related Works, either alone or in combination with other elements of the Whole UWF Project or other projects/ activities.

- In relation to the UWF Related Works, Mr. Ned Buckley's land is not within the boundary of the application site.
- 85% of the turbine sites and associated works sites are on lands where the landowner is resident and farming their own land.
- Law does not require that planning permission for all integral parts of large projects must be sought or obtained at the same time – sufficient information has been provided to assess any likely significant impacts of the UWF project as a whole.
- Consented UWF was subject to AA by the Board in 2014 and NIS submitted with UWF Related Works application as part of the Whole UWF Project and in combination with other plans and projects.
- Upperchurch Hen Harrier Scheme was proposed by developer in response to the submission by the DAU regarding the evaluation of ex-situ effects on Hen Harrier – scheme implemented under Condition 18 of UWF consent. DAU noted at appeal stage under this application on 4<sup>th</sup> June 2014 that *“where suitable habitat foraging within the SPA occurs within a radius of 250m around operational wind turbines, this is currently considered by this Department to require mitigation habitat. However, it is noted that all turbines within the proposed development are more than 250m from the SPA boundary”*.
- Upperchurch Hen Harrier Scheme is a mitigation measure and not a compensatory measure and no element of the UWF project will adversely affect the integrity of a European Site.
- Inspector stated when carrying out 2014 AA that *“...irrespective of whether these alternative foraging areas offered by way of mitigation, are or are not provided, I am satisfied that no adverse effects arise from the development in relation to the Natura Site and any qualifying interests or objectives.”*
- Marsh Fritillary, Golden Plover and Meadow Pipit are not listed as special conservation interests of the SPA. EIAR concluded that the effects of habitat loss or disturbance/ displacement on these species will not be significant.
- 32 projects and 3 activities were scoped for potential to cause cumulative effects – included large windfarms nearby including all turbines in the Hollyford area.

- Upperchurch Windfarm was evaluated since 2013 EIS and 2014 EIA for additional matters in the 2018 EIAR, e.g. new impact pathways and environmental topics.
- It is established EU and national policy to develop renewable energy resources including the generation of electricity from wind.
- Potential for construction stage noise to cause disturbance to wildlife and human health is evaluated in the EIAR. Construction work will be carried out for one project element at a time within 350m of a local residence.
- Bunkimalta Windfarm is scoped in as there is potential for this large project to be constructed at the same time as UWF related works.
- There are no construction traffic haul routes through Upperchurch village. Traffic management plan provides for the repair and reinstatement of local roads.
- Measures to deal with aquatic environment include silt fencing, passing of dirty construction water through settlement ponds, silt bags, and over 50m of natural vegetation filter (stream buffers) before reaching a watercourse.
- There are 23 project design environmental protection measures and 13 best practice measures proposed in EIAR and Surface Water Management Plan for protection of surface water quality.

## 5.0 Planning History

### 5.1. Subject site

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

- 5.1.1. 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

- 5.1.2. 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: ABP-306204-19

- 5.1.3. Concurrent SID application to the Board for development consisting of a new 110kV substation, underground 110kV cabling and ancillary works to connect the already consented Upperchurch windfarm substation (PL22.243040), to the existing 110kV overhead line.

An Bord Pleanála Ref: ABP-301959-18

- 5.1.4. On 17<sup>th</sup> 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.
- 5.1.5. 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.
- 5.1.6. Notwithstanding this, the Board was not satisfied that the information contained in the EIAR provides an adequate or robust description of the reasonable alternatives studied, which are relevant to the proposed development and its specific characteristics. It was considered that the main significant effects on the environment are impacts to Hen Harrier and aquatic habitats and species. Impacts on aquatic habitat and species would be mitigated against through implementation of a range of project design environmental measures set out in the EIAR. However, the Board was not satisfied that, following mitigation, no significant residual negative impacts on the environment would remain as a result of the proposed with respect to Hen Harrier. It was noted that sufficient consideration has not been provided regarding the routing of the cable in local road network or consideration of alternative grid connection technologies such as overhead lines.

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

Tipperary County Council Reg. Ref: 10/5010462

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

## 5.2. **Nearby windfarm applications considered for cumulative assessment**

### ***Existing Milestone Windfarm:***

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

5.2.1. 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).

5.2.2. 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)

5.2.3. 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)

5.2.4. 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

- 5.2.5. 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)

- 5.2.6. 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.
- 5.2.7. 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 25<sup>th</sup> 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

- 5.2.8. Permission was granted on 29<sup>th</sup> 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

- 5.2.9. Permission granted on 18<sup>th</sup> 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.
- 5.2.10. An extension of duration of permission was granted on 18<sup>th</sup> July 2016 (Reg. Ref: 16/600472).

An Bord Pleanála Ref: ABP-304496-19

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

**5.3. Other Nearby Windfarm Applications**

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

- 5.4. 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.
- 5.5. The reason for refusal referred to policy TWIND4 of the South Tipperary County Development Plan and the fact that the proposal is within lands identified as being unsuitable for new wind energy development.

Tipperary County Council Reg. Ref: 18/601014

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

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

- 5.7. The Board granted permission to Ecopower Developments Ltd. at a site to the north-west of the subject site for 22 no. wind turbines, up to 80m hub height and up to 45m blade length. An extension of duration of this permission was refused in November 2011 (Reg. Ref: 11/510046).
- 5.8. It was stated under the reason for refusal that there have been significant changes in the Development Plan, namely Objective BNH19, Policy HERT29 Designated Environmental Sites and Policy HERT29(a) Protection of Designated Environmental Sites, such that the proposed development is no longer consistent with the proper planning and sustainable development of the area.

Tipperary County Council Reg. Ref: 06/511044

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

## 6.0 Policy Context

### 6.1. National Framework Plan, 2018

- 6.1.1. 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.
- 6.1.2. 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.”*

6.1.3. 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.”*

6.1.4. It is also recognised that Ireland’s forests play an important role in helping with climate change mitigation, through carbon sequestration and the provision of renewable fuels and raw materials.

## **6.2. Regional Spatial & Economic Strategy for the Southern Regional, 2020**

6.2.1. 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.

6.2.2. 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.”*

## **6.3. North Tipperary County Development Plan, 2010 (as varied)**

6.3.1. 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. Most of the site is within an area identified in the Wind Energy Strategy as being “open for consideration” for wind energy development. Small areas to the north-east and south-west are within “Areas Unsuitable for New Wind Energy Development.” Wind energy policies for Tipperary are set out in Section 7.

- 6.3.2. Policy TWIND4.2 states that “proposals in Areas ‘Open for Consideration’ shall be sited having consideration to the landscape sensitivity and capacity analysis set out in the Tipperary Landscape Character Assessment 2016 and the provisions of the County Development Plan (as varied) in relation to landscape (Chapter 7). All applications shall have regard to the visual impact of turbines and ancillary development (such as access roads, boundary fencing, control buildings and grid connections).”
- 6.3.3. The site is located within a “secondary amenity area” rural designation. Development Plan Policy LH2 seeks to protect the visual amenity and character of primary and secondary amenity areas. It is also a policy (LH3) to protect and enhance listed views. Included within the listed views are “*views north and south on section of the R503 from Newport to Ballycahill*” (V12) and “*views east and west of the R497 from the R503 through the mountains to Dolla - including Mother Mountain to the West, Knockacreggan to the East, Coneen Hill to the East and the Silvermines to the west*” (V13).
- 6.3.4. Policy TWIND4.1 states that “proposals shall demonstrate conformity with existing and approved wind farms to avoid visual clutter. In this respect, developers should consider the cumulative impact of new development in the context of the location of both existing and permitted developments.”
- 6.3.5. Other policies of relevance are contained in the Development Plan relating to strategic road development (Policy TI3), sightline requirements (Table 10.1), forestry (Policy LH4), public rights of way and way-marked ways (Policy LH4)<sup>1</sup> and archaeology and cultural heritage (Policy LH16).
- 6.3.6. The site is within the Upperchurch/ Kilcommon & Hollyford Mountain Mosaic landscape character area within the Landscape Character Assessment. The landscape character area is considered to have a high compatibility with windfarms (Table 6.2).

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<sup>1</sup> The Éamonn an Chnoic Loop walking route passes through the north-east part of the site.

#### **6.4. Climate Action Plan, 2019**

- 6.4.1. 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.
- 6.4.2. It is noted that electricity accounted for 19.3% of Ireland's greenhouse gas emission in 2017; however, 30.1% of electricity was 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 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.

#### **6.5. National Adaption Framework, 2018**

- 6.5.1. 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.

#### **6.6. Natural Heritage Designations**

- 6.6.1. 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

## 7.0 The Appeal

### 7.1 Grounds of Appeal

7.2. The applicant lodged a first party appeal against the Council's decision. The appeal is accompanied by revised EIAR (Volumes C1-C4), revised Environmental Management Plan (Volume D) and revised Appropriate Assessment (Volume E), all dated January 2019. It is noted that Volume A: Planning Application Documents and Volume F: Reference Documents have not been revised.

7.3. The grounds of appeal and main points raised in this submission can be summarised as follows:

#### **First reason for refusal**

7.4. The applicant's response to the first reason for refusal refers to the NPWS submission of 13<sup>th</sup> December 2018 as summarised in Section 4.3 above. There are three outstanding questions raised within this submission relating to (1) nest

locations, (2) hunting habitat within adjacent parts of the SPA (3) and use/dependency of the western part of the windfarm site by Hen Harrier. The applicant's response to each question is summarised as follows:

*Question 1: NPWS*

- No Hen Harrier nests (active or historical) are present either inside or outside the SPA, within 2km of the UWF Related Works construction works boundary (CWB) or within 2km of a consented Upperchurch Windfarm turbine location.
- Nests identified (Appendix 8.1: Subsection 1.2.4.3) are within 1km of the May 2018 UWF grid connection planning application construction boundary.
- Nearest known historical nest location to the UWF related works is c. 2.5km south – no confirmed nest has occurred here in recent years (2015-2018).
- For period covered by current evaluation (2016-2018 inclusive), the closest recently active nest within the SPA to the UWF Related Works is 4.8km to the west of the nearest point of the CWB. Closest nest outside the SPA is 4.5km to the south of the nearest point of the CWB.

*Question 2: NPWS*

- There is not sufficient hunting habitat in parts adjacent to the SPA to provide for any nearby nesting pair of Hen Harrier within the SPA, nor it is likely that one or more nesting pairs within the SPA will need to rely on hunting habitat for which mitigation is required, within the windfarm (Volume C2: Revised EIAR & Volume E: Revised AA Reporting).
- Nesting Hen Harriers in the SPA have shown a preference for new and second rotation conifer plantations (NPWS) and foraging Hen Harrier generally prefer open habitat (heath & bog, low intensity farmed grassland and semi natural open habitat with well-established hedgerow, pre-thicket forest and areas of scrub).
- Habitat in general within 2km of the UWF Related Works are of limited use for breeding Hen Harrier as agriculture predominates. Habitat in SPA offers greater suitability for foraging Hen Harrier than that outside of the SPA.
- Load-size effect of carrying prey substantial distances from foraging grounds - distance to nest is a limiting factor.

- Scottish Natural Heritage presents a core foraging range of 2km from nest sites during breeding for Hen Harrier, with maximum range of 10km. Study recorded that despite the large distances travelled by hunting Hen Harrier, the majority of foraging was concentrated relatively close to the nest – concentration of hunting behaviour was more than 10 times higher within 1km of the nest than it was between 2 & 5km from the nest.
- One or more nesting pairs within the SPA do not currently rely on hunting habitat for which mitigation is required within the consented windfarm or within the construction area boundaries of the proposed UWF related works due to the distances stated from the works to any recorded nest sites.

*Question 3: NPWS*

- There is no indication of significant use by Hen Harriers on the western side of the proposed windfarm which may indicate some discrepancy on the hunting habitat available there.
- Evaluation of effects on foraging Hen Harrier is based on the distance from the nest rather than the presence of a suitable habitat in a given spot – Hen Harrier are central place foragers, with much foraging occurring within 2km of the nest.
- Distance of UWF Related Works to the nearest recently active nest is 4.8km within SPA (Counmagillagh) and 4.5km outside SPA (Glenough) – due to separation distance, there is limited dependence / connectivity, if any, with foraging habitats on the western part of UWF Related Works.
- Due to availability of large areas of suitable habitat inside the SPA boundary, including at nesting locations, hunting or foraging Hen Harrier from the SPA population do not rely on habitats outside the SPA at the windfarm site.
- Surveys carried out from March 2015 and April 2017 – confirms that usage of the site has remained low, in line with the original evaluation in 2013. Only one bird recorded within the consented Upperchurch Windfarm boundary in March 2015 and no observed flight paths intersected the locations of UWF Related Works.
- Preconstruction surveys at Milestone windfarm (2015 & 2017) were 3 no. observations of birds across two yearly periods of the breeding season – these surveys, and those on the subject site, support the assumption that by reason of

distance from nests, usage of UWF has continued to remain low and there is no dependency by birds breeding within the SPA upon lands where Upperchurch Windfarm is to be located.

- Passage of time has not resulted in any significant new dependence by Hen Harrier on the baseline environment for the Upperchurch Windfarm between 2013 at the current date. Dependent connectivity from the proposed Upperchurch Windfarm to SPA does not exist.

#### *Mitigation*

- Construction works will not be carried out during the Hen Harrier breeding season March to August inclusive (amendment of PD26 in revised EIAR).

#### **Second reason for refusal**

- Extent to which Hen Harrier in SPA are dependent upon any suitable hunting habitat within the site of the proposed windfarm, including additional survey information on Hen Harrier use of the development land, is addressed above.
- Bat activity surveys were carried out using automated bat detectors for 35-40 hours at each location – considered that this provides a good representation of bat activity during their most active periods.
- Applicant's consultant disagrees that transect surveys are explicitly recommended in the Bat Conservation Trust Guidelines, 2016 – states that guidelines should be interpreted and adapted on a case-by-case basis.
- Transect surveys typically only cover 2-3 hours of the night and it is usually only possible to sample one site at a given time, which hinders comparative analysis of multiple locations.
- Results of visual inspections of water crossing structures are outlined in Revised EIAR – most bridges were concrete culverts with no crevices suitable for bats and were screened out of the assessment.
- Approach to screening out bridges along the cable route was addressed in the Revised EIAR – considered to be a robust assessment that adequately addressed any impacts on potential bat roosts in bridges/ culverts along the route.

- Renovation of derelict dwelling house at the site compound is predicted to have a neutral effect on the bat roost and will not involve the destruction or disturbance of any bat roost – mitigation not considered necessary and derogation licence not required.
- Upperchurch Windfarm site offices in Knockcurraghbola Commons (Compound 2) is part of Upperchurch Windfarm (13/510003) and will not be used during construction of the UWF Related Works.
- Installation of bat boxes is proposed as a project design measure for bats – this will only be required where trees with suitability for bats will be felled. Detailed installation instructions for bat boxes can be described in greater detail in a habitat management plan agreed prior to construction with NPWS/ Tipperary County Council.

*Other*

- Effects of passage of time in the baseline environment of Upperchurch Windfarm since 2013 is set out in Revised EIAR in each of the topic chapters 6 to 17 and throughout the EIAR.
- Schedule of mitigation measures and schedule of monitoring measures were submitted in response to further information and are found in Volume D and Volume C2 of Revised EIAR.
- Best practice measures have been developed for the protection of surface water quality using industry best practice (Volumes C2 and D, Revised EIAR).
- Badger surveys of the UWF Related Works were carried out on 13<sup>th</sup> July 2017 (Volume C2, Revised EIAR).
- Correct value is nine residences within 50m of UWF Related Works construction works boundary – text in Revised EIAR has been corrected.
- Revision to cumulative evaluation – Revised EIAR defines an additional study area specifically for the cumulative effects of UWF Related Works. This provides more clarity on specific and distinct cumulative effects.

- Revised cumulative assessment takes account of the preliminary preferred route for the 110kV UGC along the R503 following Board refusal on 17<sup>th</sup> December 2018.

## 7.5. Observations

- 7.5.1. A total of four observations on the appeal were received from, or with/ on behalf of residents of the area. The main points raised in these submissions are summarised as follows:

*Ned & Carmel Buckley, Gurtvara, Upperchurch*

- Appeal contains significant new information – observers did not have the opportunity to make a submission regarding same.
- New grid route would appear to include several townlands not included in the development address and no planning notices were given for the new additional information.
- Does not seem to be any information concerning the needs of Hen Harrier outside the nesting season and Hen Harrier is not the only protected species in this habitat.
- Habitat Directive applies to the full development and if the entire plan does not comply with legislation, none of it does.

*James & Tanya Embleton, Seskin House, Upperchurch*

- Site is contiguous with the SPA, specifically designated for the protection of Hen Harrier – since Hen Harrier forage further from their nest sites during other times of the year, and indeed move to lower pastures during winter, they are in fact more vulnerable at such times.
- Recent study by Nature Ecology and Evolution at Western Ghats in India concluded that wind farms behave like apex predators and kill 75% of raptors in the area – hard to see how proposed wind farm will not have a detrimental effect on Hen Harrier, both by loss of suitable foraging and direct collisions.

- Wind farm is not a standalone project and must be considered in its entirety with the grid connection – EIA is incomplete, and no conclusive cumulative impact can be arrived at.
- Plans have changed in the course of the planning process – apparently 63 watercourses will be crossed and many feed into freshwater pearl mussel territory. Sediment from development and changes in farming practices have meant that no young grow to maturity.
- There are already a considerable number of turbines in the area running right up to the boundaries of the subject site – cumulative impact should draw from all these, as well as treating the finally approved grid link and wind farm as one unit.
- Replacement forest is going to be deciduous – after the first few years, once the canopy closes, this land is effectively lost as foraging for the Hen Harrier. Forestry advisors in this area usually advise against hard wood plantations due to the high deer population which causes too much damage to young trees for them to be viable. As a mitigation measure, success of this plan is less than certain and therefore unreliable.

*Peter Sweetman with and on behalf of Paul & Edel Grace, Grousehall, Milestone*

- It is not possible for the Board to grant a permission for this development which would be in full compliance with the Environmental Impact Assessment Directive and the Habitats Directive, and in particular the clarification provided by the following judgements of the CLEU:
  - 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
  - Case C-461/17, Brian Holohan and Other v An Bord Pleanála

*Emer Ó'Siochrú & Toal Ó'Muiré, Coumnageeha, Upperchurch*

- All issues raised in earlier submissions and by observer's neighbours (Edel & Paul Grace) remain valid as recognised and upheld by the decision to refuse by the Council.

- Appeal is not valid as it is not identical to the planning application which was the subject of the refusal – includes substantial and entirely novel items outside the scope of the original application concerning grid connection, cable routes and associated works.
- Board should refuse to consider this flawed submission because it has previously split parts and now conflated parts of their proposed 22 turbine, grid connection and associated works in such a confusing way that impedes its proper assessment.
- Proposal represents an unacceptable attempt to preserve an earlier grant of permission that was flawed under recently clarified EU environmental legislation regarding the impact of the full proposed development on a protected species that was not available to the Board at the time the permission was granted.

## 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 12<sup>th</sup> August 2014 prior to the O'Grianna and Others v. An Bord Pleanála IEHC 632 [2014] judgement, where it was determined that the connection to the national grid is an integral part of an overall windfarm development.



- 9.2. The current proposal is described by the applicant as Upperchurch Windfarm (UWF) Related Works and includes internal windfarm cabling, realignment of consented windfarm roads, haul route works, a telecom relay pole and ancillary works. The 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.
- 9.3. A concurrent application has also been submitted to the Board for a 110kV UWF Grid Connection (ABP-306204-19). 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 Related Works and the other elements of the Whole UWF Project are assessed cumulatively within the EIA, along with the any other relevant projects or activities. The Appropriate Assessment also considers whether the UWF Related Works, 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 arising in this case may be addressed under the following headings:
- Validity, procedural and legal issues
  - Policy context/ principle
  - Other issues raised in submissions
  - Environmental Impact Assessment
  - Appropriate Assessment
  - 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, bird collisions, etc. have been fully assessed and decided upon by the Board under permitted case PL22.243040. The merits of the proposed UWF Related Works and the concurrent UWF Grid Connection 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.
- 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. There are questions as to the validity of the appeal, now containing substantial information outside the scope of the original application concerning grid connection, cable routes and associated works.
- 9.6.3. At this point it should be noted that the Board was of the opinion that the Revised EIAR and NIS submitted with the appeal contained significant additional survey/background data and a significantly revised EIAR format aimed at addressing cumulative impacts with permitted and proposed developments in the vicinity of the site, including the permitted Upperchurch Windfarm and the UWF Grid Connection. It was also noted that the new UWF Grid Connection differs from that which was previously refused by the Board (ABP-301959-18). The applicant was therefore requested to publish new newspaper notices and erect new revised site notices. The public notices describe the nature, extent and location of the proposed development, including townlands, and observers and other parties were given the opportunity to comment on the revised material. However, following the statutory period, no observations or submissions regarding same were received by the Board.
- 9.6.4. In terms of the allegations of project splitting, the applicant refers to judicial review cases subsequent to the O’Granna judgement which confirmed that the law does not require that planning permission for all integral parts of a large project must 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.”*

- 9.6.5. 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.
- 9.6.6. Overall, I accept that whilst the current proposal may contain substantial information concerning grid connection, cable routes and associated works that was outside the scope of the original application, I would nonetheless be satisfied that the Revised EIAR and Revised 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 Related Works, the Whole UWF Project and any other relevant plans or projects.

- 9.6.7. Observers Peter Sweetman with and behalf of Paul & Edel Grace 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.
- 9.6.8. 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.
- 9.6.9. 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.
- 9.6.10. 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.
- 9.6.11. 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.
- 9.6.12. 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.

## 9.7. Policy Context/ Development Principle

- 9.7.1. 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 enable the consented Upperchurch Windfarm to be constructed, and when the windfarm is operational, renewable energy will be exported to the national grid. 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.
- 9.7.2. 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.
- 9.7.3. 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.”*
- 9.7.4. 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. Most of the site is within an area identified as being “open for consideration” for wind energy development. It is noted that there is a concentration of existing and permitted windfarms in the Slievefelim-Silvermines and Hollyford Hills uplands. Large parts of these uplands are designated as European Sites or as Secondary Amenity Areas in the Development Plan and it is recommended in the Wind Energy Strategy that there should be a precautionary approach and that these areas should be designated as unsuitable for new wind energy development.

9.7.5. Notwithstanding this, the proposed UWF Related Works and the UWF Grid Connection are enabling works for the already permitted windfarm development and should not be considered *new* wind energy development for the purposes of assessing their suitability within this area. Policy TWIND4.2 states that “*proposals in Areas ‘Open for Consideration’ shall be sited having consideration to the landscape sensitivity and capacity analysis set out in the Tipperary Landscape Character Assessment 2016 and the provisions of the County Development Plan (as varied) in relation to landscape (Chapter 7). All applications shall have regard to the visual impact of turbines and ancillary development (such as access roads, boundary fencing, control buildings and grid connections).*” Issues relating to the siting of the windfarm, landscape sensitivity and capacity analysis have already been addressed in the previous planning application. The enabling works shall therefore be assessed under Development Plan Policy TWIND4.2 as ancillary development, such as access roads, boundary fencing, control buildings and grid connection.

9.7.6. The visual impact of the proposed UWF Related Works and the UWF Grid Connection is assessed in further detail under the relevant environmental factors of the EIA below. The EIA also assesses the impact of the enabling proposals from listed views and other sensitive receptors. 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 or appeal. The principle of a windfarm has already been accepted and it follows that the principle of any development works required to enable the permitted development should also be acceptable subject to an assessment under any other relevant criteria, which are covered below under the EIA and Appropriate Assessment.

9.7.7. Overall, I consider that the proposed UWF Related Works 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.”*

## 9.8. Other issues raised in submissions

- 9.8.1. A number of issues raised within observations on the appeal are summarised hereunder and are dealt with, both in a broad sense and specifically within the relevant sections of the EIA and Appropriate Assessment.
- 9.8.2. It is stated in observations that the proposed windfarm may have a detrimental effect on Hen Harrier, both by loss of suitable foraging habitat and direct collisions. The needs of Hen Harrier outside the nesting season when the species moves to lower pastures is also highlighted (Ned & Carmel Buckley and James & Tanya Embleton), together with the fact that replacement deciduous forestry becomes unsuitable for Hen Harrier when its canopy closes.
- 9.8.3. The impact of the proposed UWF Related Works, individually and in combination with other aspect of the Whole UWF Project, and with any other plans and projects on Hen Harrier is a reoccurring issue in all submissions and is addressed in full detail under the Appropriate Assessment and within the Biodiversity section of the EIA. 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. 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. Notwithstanding this, 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. Hen Harrier wintering grounds are typically lowland sites below 100m and the windfarm site and most of the grid connection is an upland location.

- 9.8.4. With respect to the replacement forestry being lost for foraging Hen Harrier over time when the canopy begins to close, it should be noted that this is a replanting obligation for trees to be felled to accommodate the proposed windfarm. Loss of suitable Hen Harrier habitat will be mitigated by the Hen Harrier Management Scheme in itself. Suitable foraging habitat for Hen Harrier will also be provided within the UWF Replacement Forestry until such a time that the forestry matures and the replacement forestry will comprise of native tree and shrub species planted in clusters, with the provision of unplanted ride lines for the benefit of biodiversity. All tree and shrub species will be silviculturally compatible and acceptable to the Forest Service.
- 9.8.5. Observers James & Tanya Embleton 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.
- 9.8.6. A full assessment of the impact of the proposal on all other protected species and habitat is included in the EIA and Appropriate Assessment.

## 10.0 **Environmental Impact Assessment**

### 10.1. **Introduction**

- 10.1.1. UWF Related Works forms part of the Whole UWF Project comprising a permitted 22 no. turbine windfarm and proposed grid connection application to the Board. Having regard to the cumulative nature of all elements of the Whole UWF Project and pursuant to the criteria set out under Schedule 5 of the Planning and Development Regulations, 2001 (as amended), an Environmental Impact Assessment Report has been prepared for the Whole UWF Project, including the UWF Related Works the subject of this appeal. 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.”*

- 10.1.2. Directive 2014/52/EU amending the 2011 EIA Directive was transposed into Irish legislation on 1<sup>st</sup> September 2018 under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018. The original EIAR submitted in May 2018 and the Revised EIAR lodged with the planning appeal in February 2019 are assessed under the provisions of the new Directive.
- 10.1.3. 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 prescribed bodies and other observers has been set out at Sections 4.4 and 7.5 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.
- 10.1.4. These issues are addressed below under the relevant headings, and as appropriate in the reasoned conclusion and recommendation including conditions.
- 10.1.5. 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). The Revised EIAR dated January 2019 and submitted with the planning appeal incorporates the following changes to the May 2018 EIAR:

- Effects on Hen Harrier, and particularly the ex-situ SPA effects;
- Additional information on baseline surveys for bats and badgers;
- Update of project design environmental protection measures;
- Inclusion of additional study area for the cumulative effects of UWF Related Works;
- Assessment of effects of passage of time in baseline environment of UWF;
- Revised cumulative assessment of Whole UWF Project to take account of new grid connection proposal.

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 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, up to date and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment.

### 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 the alternative locations, layouts, processes and mitigation measures for the project are provided in Chapter 4 of the EIAR. 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 loss of employment and payments to landowners; loss of carbon off-set potential from the generation of renewable energy; increased importation of fossil fuels; loss of long term economic gain; and lost opportunity for a valuable high voltage link in the Silvermines area.
- 10.3.3. A combination of three alternative delivery routes were considered and scored after comparison of environmental effects on water quality, road surface and road safety/traffic delay. The road with the lowest scoring includes a narrow bridge and would require widening, reinstatement and road closure. The chosen route will require upgrades at 13 no. locations and this forms part of the planning application for haul route works. Alternatives were considered for the turning point off the R503 for access to Borrisoleigh Road, with the chosen turning point at an existing entrance to a forestry yard.
- 10.3.4. Considerations for alternative locations for the proposed telecoms relay pole include a line of sight with an existing mast, access and power supply. Two locations were assessed and the site at Knockmaroe was chosen due to easy access and a readily available power source.
- 10.3.5. Alternative layouts were assessed for internal windfarm cabling to connect the wind turbines to the windfarm substation. Two alternative layouts were considered, one along windfarm roads and local roads where possible and the other laid in windfarm roads and improved grasslands and forestry. It was considered that there is little biodiversity value within the farmed area dominated by improved grassland and forestry. Furthermore, the latter option would not require extensive road closures.

- 10.3.6. The proposed development includes realigned windfarm roads accessing Turbines 5 and Turbines 19/ 20/ 21. The realigned route to T5 is shorter by 230m and the proposed access to T19/ 20/ 21 would utilise an existing farm track. Both realigned routes scored higher in comparison of environmental effects.
- 10.3.7. Alternative processes were devised to avoid, prevent, or reduce the environmental effects of the proposed development. These include alternative processes relating to the timing of works to prevent significant cumulative effects of dust and noise; sedimentation effects; in-combination sedimentation effects to water; disturbance effects to biodiversity; damage to existing utility services; and loss of roadside boundaries.
- 10.3.8. A number of different options were available to mitigate effects on archaeology. Monitoring of all ground works will be carried out to prevent significant effects rather than the alternative of monitoring ground works near known sites only.
- 10.3.9. In general, all reasonable alternatives that are relevant to the project and its specific characteristics are clearly presented in the EIAR. The main reasons for the chosen site 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 Upperchurch, Foilnaman and Gortakelly electoral divisions 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 UWF Related Works 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 isolated residences and farmsteads and the nearby villages of Upperchurch to the east and Kilcommon to the west. There are 41 no. local residences within 350m of the windfarm construction site. An additional 33 no. residences are along haul routes. With respect to the grid connection, a total of 866 local residents and 91 community facilities are within 350m of construction. There are 371 local residents and 68 community facilities located within 50m of haul routes.
- 10.5.3. The area is also used by walkers/ cyclists, road users, farm/ forestry workers, etc. The population of the local area was 1,176 in 2016, representing an increase of 9.5% over the past 20 years. Agriculture and forestry account for 78% of business premises and 17% are employed in agriculture, forestry and fishing in the local area (4% national average). The equivalent figures for the Whole UWF Project cumulative evaluation study area are 60% and 8% respectively. The population of the Whole UWF Project cumulative evaluation study area was 15,323 in 2016.
- 10.5.4. The Eamonn a Chnoic Loop, Ormond Way and Ormond Way Cycle Route are located in the local study area and Slieve Felim Way is within the cumulative study area.

#### *Characteristics of the Proposed Development*

- 10.5.5. The proposed development forms part of an overall windfarm project that includes the consented windfarm of 22 no. turbines, the proposed grid connection and the subject development comprising works related to the windfarm within the approximate footprint of the consented development. The extent of works will be in proximity to a number of residential receptors and recreational uses.

- 10.5.6. The construction period is expected to take 3-6 months for pre-construction (detailed design, confirmatory surveys, felling, etc.), and the main construction activities will take 6-8 months. 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*

- 10.5.7. It is predicted that there will be neutral impacts on the local economy arising from the UWF Related Works development and a slight positive impact from the combined spending and jobs when the cumulative impact of the Whole UWF Project is assessed. Increased employment opportunities can also positively influence health by supporting job security. The cumulative impacts are considered to be imperceptible in the context of the population of the upland area.
- 10.5.8. With respect to the consideration of the passage of time since the original grant of permission for the windfarm in 2014, any improvements to the local economy are small and not material. The construction of the Milestone Windfarm in 2018 is not expected to cause a noticeable effect on the local economy.
- 10.5.9. There will be approximately 200 people employed during the construction phase of the Whole UWF Project. Payments of €1.6 million will be made to local landowners and €3.2 million will be spent regionally on stone and concrete. The induced expenditure on locally sourced goods and services will be c. €1.4 million. The €6.2 million cumulative gross value added will be equivalent to c. 2% of the overall size of the local economy in the cumulative evaluation study area.
- 10.5.10. No likely or potential health impacts will occur during the operational phase from contamination of water supply; air quality or noise impacts, impacts on cardiovascular health; or traffic hazard impacts. During the operational phase, there will be neutral or no health impacts arising from employment opportunities, noise and air and roads.
- 10.5.11. Tourists and visitors to the area for walking, bird watching, etc. will only be exposed to changes in the environment on a temporary basis and are not therefore considered particularly sensitive. There are no likely impacts or neutral health impacts on transient people due to a range of reasons including the distance of waymarked trails from construction works and the proposed substation; the short duration of construction works; the non-intrusive nature of noise from turbines; and

the fact that electro magnetic field levels will be below magnetic field reference levels.

10.5.12. The cumulative impact of the proposed development is also assessed along with the (then) consented Bunkimalta Windfarm. However, the decision on this case has been quashed.

#### *Mitigation Measures*

10.5.13. 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:

- PD001 – construction works carried out in daylight hours.
- PD002 – Use of flag-men at temporary site entrances.
- PD003 – Construction works within 350m of residences will not take place at the same time as grid connection or Upperchurch Windfarm.
- PD04 – confirmatory consultations with utility providers and confirmatory ground surveys will be carried out ahead of works.
- PD10 – No batching of wet cement on site.
- PD18 to PD21 – No refuelling of vehicles within 100m of watercourse and wells; storage of fuel in designated bunded area; and limitations on parking in proximity to watercourses.

#### *Residual Impacts*

10.5.14. Residual impacts will be neutral.

#### ***Conclusions on Population and Human Health***

10.5.15. Overall, it is considered that there will be no significant cumulative adverse impacts of 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 and the local economy from increased employment.

## 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 Related Works, 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. Baseline information was sourced from consultations with various bodies including NPWS and IFI; ecological evaluation guidelines; desktop analysis; and fieldwork. The primary objective of Hen Harrier surveys, as agreed with NPWS, was to identify all breeding and winter roosting sites in suitable habitat within a 2km radius of proposed works. Ornithological surveys were carried out from March 2015 to April 2017 and existing records of Hen Harrier usage of the area dating back to 2003 were collated. Further consultation was undertaken in January 2019 with local Hen Harrier experts and the NPWS.
- 10.6.3. Habitat surveys were conducted from July 2017 within a 50m buffer of work locations and classified in accordance with Fossitt (2000). Previous habitat surveys for the 2013 EIS were also carried out to the same classification and best practice guidance. Surveys of watercourses associated with the windfarm were carried out in July 2017 and on the 9<sup>th</sup> and 13<sup>th</sup> September 2017. These surveys included biological sampling (Q Value) and fisheries assessments. Bat surveys were undertaken in 2016 to assess roost suitability of buildings and trees; identify important bat roosts; and to identify important commuting routes/ feeding areas. Otter and badger surveys followed NRA guidance and included a linear search for



300m upstream and downstream of each watercourse crossing for otter and a search for setts within 50m of proposed works locations for badgers. Field signs for other mammals were also recorded during non-volant mammal surveys.

- 10.6.4. UWF Related Works are located mainly on upland agricultural lands, with some works required to roadside verges and boundaries. A small amount of forestry felling is required. The windfarm site is located mostly in the catchment of the River Suir, with a smaller part to the east and most of the grid connection within the Shannon catchment. No UWF Related Works are within the Lower River Suir SAC or Lower River Shannon SAC. A small part of the Slieve Felim to Silvermines Mountains SPA boundary overlaps the UWF Related Works site boundary; however, no actual works are proposed in the SPA. The R503, along which the grid connection is proposed, passes by and through sections of the Lower River Shannon SAC and Slieve Felim to Silvermines Mountains SPA.
- 10.6.5. The cumulative evaluation study area for European Sites is the Slieve Felim to Silvermines Mountains SPA boundary plus 2km, the Mulkear River catchment in the Lower River Shannon SAC, and the Clodiagh River and Multeen River catchment in the Lower River Suir SAC. In terms of the passage of time, EPA monitoring data for 2012 and 2017 demonstrates that water quality in the catchments of the windfarm has remained stable and Hen Harrier usage of the site has remained low, with habitat sub-optimal.

#### *Characteristics of the Proposed Development*

- 10.6.6. The subject development, referred to as UWF Related Works, is for the purposes of facilitating the permitted Upperchurch Windfarm and includes the laying of underground cabling, realignment windfarm roads and haul route works.
- 10.6.7. Haul route works will include the removal of soils and laying of crushed stone and hard-core in roadside verges; temporary removal of roadside boundaries; opening of temporary entrances; and construction of temporary access roads on private lands. Other ancillary works will include temporary and permanent watercourse crossings, forestry felling (0.3 ha), drainage, temporary storage of excavated material (930 m<sup>3</sup> permanently in berms and 10,850 m<sup>3</sup> temporarily) and reinstatement of construction works areas. A total of 32 no. watercourse crossings are proposed under the UWF Related Works application.

10.6.8. The other elements of the Whole UWF Project will include the underground grid connection from the consented substation on site over a distance of 28.9km to a new substation at Mountphilips. 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, Upperchurch Windfarm Hen Harrier Scheme and monitoring activities.

*Potential Impact of the Proposed Development*

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

- **European Sites** – In view of conservation objectives and rationale for designation of the European Sites under consideration, UWF Related Works, 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 or the Slieve Felim to Silvermines Mountains SPA, having regard to their respective conservation objectives (Section 11 below).
- **NHA/ pNHA** – UWF Related Works 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, presence of protected sites upgradient of proposed works, and absence of construction activities or drainage works within protected sites.
- **Aquatic species** – decrease in instream aquatic habitat quality. Instream works at some watercourses will require direct excavation of banks and bed of watercourse – can change physical character of watercourse and has potential to degrade the quality of the baseline habitat. Additional sediment or contamination can have negative implications for fish.
- Spatial extent of such effects will occur within the footprint of instream works or culvert replacement works, and also downstream within the zone of sediment transport.

- 5 watercourse crossings along grid connection route will potentially require instream culvert replacement works.
- Effects on surface water are likely to arise mainly from trench excavation works within the road and at watercourse crossings at existing road bridges and culvert locations – between 100m and 200m of trench will be excavated in any one day.
- For Whole UWF Project there are 10 watercourse crossings with fisheries value where instream works are required – dispersed between two regional catchments and within several local sub-catchments.
- Changes to flow regime – potential decrease in aquatic habitat identified at 10 no. watercourse crossings within watercourses with fisheries value in the Whole UWF Project where instream works or culvert replacement works are required.
- 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 aquatic habitat.
- Implementation of sensitive crossing designs in consultation with IFI. Provision for reinstatement works including site-specific bank stabilisation measures, reinstatement of bank slope and character, creation of compound channels, and reinstatement of instream flow features
- Disturbance/ displacement to fish and aquatic species – limited to footprint of any instream works or culvert replacement directly upstream and downstream, temporary and permanent instream works structures and bank-side works, (10 no. instream works locations where crossings of fish bearing streams are required).
- Temporary displacement will be limited to the affected stretch of watercourse, without cumulative population level impacts at a watercourse or catchment level.
- Riparian habitat degradation – affected at 11 no. watercourse crossings identified as having fisheries value and evaluated as slight to moderate adverse. Spatial extent will occur within footprint of instream works, with potential for direct impacts at approach to watercourse crossing areas.

- Riparian habitat impacts limited to construction phase, reversible, temporary and short-term and in line with baseline conditions.
- Spread of aquatic invasive species – potential for introduction of invasive species at 96 no. watercourse crossings associated with the Whole UWF Project. Can be transported both upstream and downstream and catchment wide impacts.
- **Terrestrial Habitats** – Within the UWF Related Works area, 22 habitat types were recorded over an area of 190.5 ha. This comprised 59.5% improved agricultural grassland (GA1) and 22% conifer plantation (WD4), with remaining habitat made up of wet grassland (GS4), built land and artificial surfaces (BL3), wet heath (HH3) and upland blanket bog (PB2). Linear habitat included earth banks (BL2) and eroding/ upland rivers (FW1).
- 42 habitat types recorded along the 295.5 hectares of the grid connection study corridor. This comprised of agricultural grassland, built land, wet grassland, a mosaic of built land and amenity grassland, drainage ditches, hedgerow, earthen banks and tree lines.
- With the exception of some maturation of trees, there were no material changes in the make up of terrestrial habitat on the windfarm site since the 2013 EIS.
- 14 habitat types comprising 36.4 hectares were recorded along haul route activity locations – dominant habitats were improved agricultural grassland, built land and artificial surfaces, mixed broadland woodland and dry meadows and grassy verges. Total area of linear hedgerow and treelines present comprise 2,031m.
- Habitats of international importance located at four locations where UWF Grid Connection passes through the Lower River Shannon SAC. Habitats of national importance include Clare River, Newport River, Bilboa River and Upland/ Eroding Streams habitat.
- Reduction in terrestrial habitat – permanent loss of locally important wet grassland within UWF Related Works – magnitude of change represents 0.04% of total habitat within study area.
- No habitat of county, national or international importance are affected by permanent land use change.

- Habitat loss in respect of Whole UWF Project will be limited to small distinct areas of 3 no. habitat types totalling 0.12 hectare.
- Hedgerow severance – no hedgerows or field boundaries evaluated as of county, national or international importance.
- 145m of hedgerow and 4 no. trees will be temporarily removed at internal windfarm cabling and some haul route works locations – will be immediately reinstated after completion of works.
- Total permanent hedgerow loss will be 1195m across Whole UWF Project (980m at Upperchurch Windfarm).
- Loss of high value trees – 26 no. mature and 7 no. immature trees will be lost throughout the Whole UWF Project (24 no. within Upperchurch Windfarm).
- **Hen Harrier:** Assessed further in Section 11 below.
- No nests within 2km of UWF Related Works, and together with low usage of the UWF Related Works/ Upperchurch Windfarm area by Hen Harrier, and measures including no construction works during breeding season, impacts evaluated as slight adverse.
- For Whole UWF Project, impacts change to significant and positive mainly due to the UWF Replacement Forestry and UWF Other Activities (Upperchurch Hen Harrier Scheme).
- Disturbance or displacement effects of Whole UWF Project to foraging hen harrier will be no greater than for UWF Related Works, largely due to separation distance (greater than 2km) to Hen Harrier nest, and the location of the proposed UWF Grid Connection along the public road corridor.
- **General Bird Species:** 37 species of breeding bird recorded in 2013 surveys that are typical of the habitat present (Skylark, Kestrel, Peregrine Falcon (Annex I), Stonechat and Crossbill). Other recorded species include Raven, Sand Martin, Reed Bunting, Blackbird, Goldcrest, Great Tit, Wren and Robin and Meadow Pipit. Distribution of general bird species considered unchanged with respect to passage of time since 2013 EIS.

- During ecological surveys of the 110kV route in January 2019, evidence was recorded of Grey Wagtail, Dipper, Swallow, Meadow Pipit, and a total of 17 no. general wintering birds. Suitable habitat was recorded for Golden Plover and Merlin. Four buildings assessed as having a high suitability for Barn Owl.
- Golden Plover habitat loss – instances of land use change with respect to suitable foraging or roosting habitat will occur from works on either side of the Slieve Felim to Silvermines Mountains upland area – habitat loss associated with UWF Related Works (0.2 ha), Upperchurch Windfarm (7.81 ha) and UWF Replacement Forestry (3.99 ha).
- Golden Plover disturbance displacement – Potential for disturbance to occur on suitable foraging/ roosting winter habitat from construction works and the presence of work crews – however, no Golden Plover were recorded within the study area.
- Meadow Pipit habitat loss – Instances of land use change in respect of suitable breeding habitat will occur from works associated with the UWF Related Works (0.2 ha), UWF Replacement Forestry (3.99 ha) and Upperchurch Windfarm (7.81 ha) – magnitude expected to be low in the context of the extent of available habitat in the wider surrounding area. No land use change will occur within the SPA and Upperchurch Hen Harrier Scheme will enhance Meadow Pipit habitat.
- Extent of habitat loss comprises a major alteration to baseline conditions within UWF Replacement Forestry lands – offset by retention of rides within deciduous woodland to be planted. Also, majority of land use change is from improved agricultural grassland, which is sub-optimal for Meadow Pipit.
- Extent of habitat loss overall for Meadow Pipit comprises a small extent of available habitat within 1km of the Whole UWF Project.
- General bird habitat enhancement – Planting of equivalent deciduous forestry for lower ecological value conifer plantation constitutes land use change to higher value.
- Management measures as part of the Upperchurch Hen Harrier Scheme will increase habitat quality for ground nesting birds and general birds of open countryside.

- Instances of enhancement and management of habitat specifically for the benefit of birds will occur as part of other elements of the Whole UWF Project.
- **Bats** – cumulative study area boundary comprised buildings within 150m of construction works area of activity locations; mature trees within 50m of construction works area of activity locations; hedgerow severance locations; and bridges within construction works locations or along concrete/ aggregate haulage routes of Whole UWF Project.
- Passage of time – surveys of UWF Related Works confirmed continued usage of suitable buildings and habitats by bat species. Descriptions within 2013 and 2014 documents for Upperchurch Windfarm remain relevant.
- *Destruction or disturbance of bat roosts in trees (construction stage)* – felling can cause death or injury to bats, or associated disturbance can cause them to emerge during daylight, thus exposing them to diurnal predators.
- Construction work within root zone of trees can cause them to die and fall at a later stage.
- Surveys at UWF Related Works study area did not identify any trees with roosting suitability.
- Grid Connection is expected to only affect one tree that has low suitability for bats – a further 11 no. trees within 50m of the 110kV UGC works on public road will not need to be felled and they will have low suitability for roosting habitat.
- *Severance of commuting routes or feeding areas (construction stage)* – only some short sections (5-10m) of hedgerow at Mountphilips Substation and hedgerow or field boundary at realigned windfarm road RWR2, internal windfarm cabling and haul route works HW7 will be affected.
- 360m of hedgerow will be removed as part of the Upperchurch Windfarm works; however, there is extensive foraging habitat outside the site and approximately 360m of new hedgerow will be planted to mitigate this loss of habitat.
- *Disturbance or displacement due to lighting (construction stage)* – Lighting will be used at Mountphilips substation compound and at Upperchurch Windfarm site

compound during construction – restrictions on lighting have been incorporated into project design. Separation distance between compounds will be c. 30km.

- Upperchurch Windfarm site Compound 2 has known bat roost – will not be used by UWF Related Works personnel or to store any material, equipment or tools associated with UWF Related Works.
- **Non-Volant Mammals:** Disturbance/ displacement of badgers may occur where construction works are in close proximity to occupied badger setts
- Makeup of suitable habitat for badger, otter and other mammals on the Upperchurch Windfarm site has not materially changed since 2012/ 2013 – surveys for UWF Related Works confirm low usage of windfarm area by these species.
- Badger habitat loss – instances of foraging and/ or breeding habitat loss will occur across the UWF Grid Connection, UWF Related Works, UWF Replacement Forestry and Upperchurch Windfarm; total habitat loss across Whole UWF Project will be c.6.4 ha.
- UWF Replacement Forestry will result in permanent land cover change to habitat also suitable for badger – slight positive change to higher quality breeding and foraging habitat. Upperchurch Hen Harrier Scheme will also benefit and possibly attract badgers to the area.
- No active badger setts were identified in baseline studies of UWF Related Works or Upperchurch Windfarm.
- Possible significant effects on otter from displacement resulting from noise or visual intrusion may therefore affect in turn the integrity of European Site (see Section 11.6).
- Construction works for Whole UWF Project will occur across a c.30km wide area, which includes suitable foraging and breeding habitat for badger – effects are limited to the Mountphilips area.
- Otter disturbance/ displacement – Potential to cause disturbance or displacement of otter at larger watercourse crossing points along UWF Grid Connection. 3 of



15 suitable watercourse crossing points along the public road had signs of otter use within 300m.

- Considering brief duration of works at watercourse crossings and the small scale of proposed works, the magnitude of impact in relation to disturbance to otter is expected to be slight.
- ***Irish Hare, Pine Marten, Red Squirrel and Fallow Deer – Habitat Loss, Disturbance/ Displacement*** – construction works will involve groundworks and vegetation clearance resulting in temporary and/ or permanent land use change of some suitable foraging or breeding habitat – deciduous and mixed forestry/ woodland/ scrub in respect of Pine Marten, Red Squirrel and Fallow Deer and open fields, grassland and upland heath and bog in respect of Irish Hare.
- Instance of land use change or suitable habitat will occur in the context of UWF Grid Connection, UWF Related Works, UWF Replacement Forestry and Upperchurch Windfarm. Effects offset by management of lands such as UWF Replacement Forestry and Upperchurch Hen Harrier Scheme.
- Displacement/ disturbance with UWF Related Works will be temporary and limited to the immediate vicinity (i.e. within 50m). Overall populations not expected to be affected given availability of suitable habitat in the wider area.
- Instances of disturbance may occur across Whole UWF Project – magnitude evaluated as not significant.
- ***Amphibians & Reptiles*** - Suitable habitat exists within the UWF Related Works area for Common Frog and Common Lizard – both recorded in surveys. All amphibians and reptiles evaluated as of local importance (higher value).
- Makeup of suitable habitat for amphibians or reptiles on Upperchurch Windfarm site has not materially changed and descriptions in 2013 and 2014 documents remain relevant to cumulative evaluations in Revised EIAR.
- Cumulative impacts on amphibians and reptiles in terms of habitat degradation, reduction in foraging habitat, disturbance/ displacement and physical injury/ mortality for individuals are scoped out due to spatial extent, temporary nature and low occurrence.

- **Marsh Fritillary** – Suitable habitat (0.0062 ha) overlaps UWF Related Works constructions areas at Shevry where cabling is to be placed under consented roads. Three colonies within Whole UWF Project study area with total area of 1.2 ha. - distance between colonies excludes cumulative impacts.
- Only butterfly species in Ireland listed in Annex II of the EU Habitats Directive – recorded as of County importance in study area.
- Passage of time – not recorded during site investigations for Upperchurch Windfarm. Population often fluctuates.
- Evidence of breeding in the form of larvae webbing recorded at 4 locations – all outside works area boundary.
- Magnitude of impact loss evaluated at medium (5-20% of habitat present). There was an absence of webs within habitat to be removed and low overall number present.
- No populations of Marsh Fritillary or suitable supporting habitat identified within 50m of 110kV UCG route – no potential for cumulative effects.

#### Mitigation Measures

- **European Sites:** Project Design Environmental Protection Measures PD01, PD05, PD06, PD07, PD09, PD10, PD11 and PD12-33. Stage 2 Appropriate Assessment concludes that, following consideration of Project Design Measures, significant effects are avoided, (see Section 11.6)
- Best practice measures will be employed to afford further protection to the environment – includes monitoring of nesting and roosting Hen Harrier, monitoring of non-native plant species, best practice measures for removal of vegetation during construction and management of general non-native invasive species.
- Surface Water Management Plan to provide water management framework for construction works.
- Invasive Species Management Plan to include monitoring and biosecurity measures.

- ***Invasive species*** – Best Practice Measures RW-BPM-01, RW-BPM-02, RW-BPM-04 to 11, RW-BPM-16, RW-BPM-17, RW-BPM-19 and RW-BPM-22.
- ***Aquatic species***: Project Design Environmental Protection Measures PD01, PD07, PD09-25 and PD29-33.
- ***Terrestrial habitat*** - Project Design Environmental Protection Measures PD02, PD05 to PD07, PD11 and PD19, together with Best Practice Measures RW-BPM-16 to RW-BPM-18.
- All reinstatement will be overseen by project ecologist.
- Any temporary hedgerow loss will be immediately reinstated once works are complete with like for like vegetation.
- Total of 4.4km of new hedgerow will be planted within Whole UWF Project study area.
- ***Hen Harrier*** - Project Design Environmental Protection Measures PD26 to PD28.
- Best practice measures RW-BPM-12 and RW-BPM-17 developed for the protection of Hen Harrier.
- ***General Bird Species*** - Project Design Environmental Protection Measures PD02, PD07 & PD28.
- Best practice measures RW-BPM-17, RW-BPM-19 and RW-BPM-22 for protection of general bird species.
- ***Bats*** - Project Design Environmental Protection Measures PD02 and PD37 to PD42.
- Installation of bat crossing at UWF Related Works locations proximal to identified bat roosts or areas of high foraging activity – ensures linear connectivity is maintained.
- When construction is completed, all affected hedgerows or field boundaries will be reinstated to at least their former (or better) condition.
- Several elements of the Whole UWF Project will involve hedgerow planting.
- Severance of most commuting routes/ foraging areas will be short term in duration, reversible and offset by planting of semi-mature trees and shrubs.

- Fitting of cowls to all lights to minimise light spill and use of motion and time sensors to minimise amount of time lights are operational.
- Best Practice Measures RW-BPM-13 to RW-BPM-15 for the protection of bats.
- **Non-Volant Mammals** - Project Design Environmental Protection Measures PD01 and PD29 to PD36.
- Best Practice Measures RW-BPM-21 to RW-BPM-22.
- Implementation of Surface Water Management Plan and Invasive Species Management Plan.
- **Amphibians & Reptiles** - Project Design Environmental Protection Measures PD01 and PD07.
- Best Practice Measures RW-BPM-16, and RW-BPM-22 to RW-BPM-24.
- **Marsh Fritillary** - Project Design Environmental Protection Measures PD06, PD07, PD09 and PD43.
- RW-BPM-25 – Measures to ensure the protection of Marsh Fritillary.
- The following summarises each of the best practice measures listed for biodiversity as set out in Section 8.13 of the EIAR:
- RW-BPM-01 – measures for protection of surface water quality during watercourse crossing open trench works where dam and over pump method is used.
- RW-BPM-02 – measures for protection of surface water quality during watercourse crossing open trench works where dam and pipe/ flume method is used.
- RW-BPM-03 – measures for protection of surface water quality during stream crossing open trench works where the channel diversion method is used.
- RW-BPM-04 – measures for protection of surface water quality during widening or replacing an existing culvert.
- RW-BPM-05 – surface water quality measures during excavation works within 50m of a watercourse (Class 1 & 2).

- RW-BPM-06 – surface water quality protection measures during tree felling works.
- RW-BPM-07 – Protection of surface water and groundwater quality during use of cement-based compounds.
- RW-BPM-08 – Protection of surface water and groundwater quality during storage and handling of fuels, oils and chemicals.
- RW-BPM-09 – Design of new permanent watercourse crossing structures to prevent flood risk.
- RW-BPM-10 – Surface water quality protection measures during temporary storage of overburden.
- RW-BPM-11 – Surface water quality protection measures during permanent storage of overburden.
- RW-BPM-12 – Monitoring of nesting and roosting Hen Harrier.
- RW-BPM-13 – Minimising the effects of lighting on bats.
- RW-BPM-14 – Protection of potential tree and bridge bat roosts.
- RW-BPM-15 – Bats - post construction monitoring.
- RW-BPM-16 – Monitoring of non-native invasive plant species.
- RW-BPM-17 – Best practice measure for the removal of vegetation during construction.
- RW-BPM-18 – Best practice for the protection and preservation of tree roots during the construction phase.
- RW-BPM-19 – Disturbance to and/ or displacement of nesting Common Kingfisher and other riparian bird species.
- RW-BPM-20 – Monitoring of identified badger setts (operational years 1 to 5).
- RW-BPM-21 – Disturbance and/ or physical injury to other mammals.
- RW-BPM-22 – Management of general non-native invasive species.
- RW-BPM-23 – Best practice methods to ensure the protection of common frog and smooth newt.

- RW-BPM-24 – Best practice methods to ensure the protection of Viviparous lizard.
- RW-BPM-25 – Measures to ensure the protection of Marsh Fritillary.

### *Residual Impacts*

- 10.6.10. It is stated throughout the EIAR for each environmental aspect that the residual impact is the same as the impact set out in the impact evaluation table section under each environmental aspect.
- 10.6.11. Only slight negative effects are likely to occur to Hen Harrier with respect to permanent and temporary foraging habitat loss as a consequence of the UWF Related Works on its own, and when considered cumulatively with the Whole UWF Project, significant positive cumulative impacts are expected, which overall is considered cumulatively neutral. Slight negative impacts are likely to occur to Hen Harrier with respect to disturbance/ displacement as a result of the UWF Related Works alone, and neutral when considered cumulatively. There are considered to be no significant adverse impacts on Hen Harrier.

### ***Conclusions on Biodiversity***

- 10.6.12. Impact on ten different sensitive biodiversity aspects arising from the proposed UWF Related 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 included an aquatic ecology survey (Jan. 2017 & June 2017), terrestrial habitat surveys, Hen Harrier surveys, Kingfisher survey (2016), bat surveys, otter surveys (2016/2017), badger surveys, other mammal surveys, amphibian and reptile surveys and Marsh Fritillary surveys (2016/2017). 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.
- 10.6.13. UWF Related Works are mainly located within the catchment of the River Suir SAC and the grid connection is mainly within the catchment of the River Shannon SAC. UWF Related Works adjoin the Slieve Felim to Silvermines Mountains SPA. The

UWF Related Works study area includes habitat which may be used occasionally by foraging Hen Harrier; however, no suitable breeding habitat and winter roost habitat is present. General birds in the area are typical of the hill farming land use and include Meadow Pipit, which was recorded in surveys.

- 10.6.14. Four bat roosts were identified, none of which are in the construction area boundary, and no badger setts or evidence of otter was recorded in the UWF Related Works area. Fallow deer, Red Fox and Irish Hare are present throughout the receiving environment and suitable habitat was recorded for Viviparous Lizard. Habitat for Marsh Fritillary is present at Shevry, a small amount of which overlaps the construction works boundary. Evidence of breeding was found outside the construction works boundary.
- 10.6.15. The overall impact of the proposal on certain aspects of biodiversity, such as the removal of habitat, is unavoidable. There will be slight, and imperceptible/ slight to moderate impacts on aquatic habitat and species from the UWF Related Works. Similar impacts will occur in respect of the Whole UWF Project. Moderate but temporary impacts will occur to other mammals (Irish Hare, Pine Marten, Red Squirrel and Fallow Deer) in terms of disturbance/ displacement. All other impacts on environmental aspects are evaluated as being not significant, neutral, imperceptible, slight adverse and positive.
- 10.6.16. With respect to the proposed UWF Related Works in combination with other elements of the Whole UWF Project, cumulative impacts will range from imperceptible to moderate for aquatic habitat and species; not of cumulatively greater significance than for the UWF Related Works on its own for terrestrial habitat; significant and positive for Hen Harrier; slight adverse in term of habitat loss and slight positive in terms of habitat enhancement for general bird species; imperceptible/ not significant for bats; not significant to moderate for badger and other mammals and not significant to slight adverse in relation to otter; and slight adverse for marsh fritillary.
- 10.6.17. 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.

- 10.6.18. With respect to the in-combination effects of UWF Related Works with the other elements of the Whole UWF Project, it is stated in the EIAR that impacts to aquatic habitats and species will range from imperceptible to moderate. There will be significant and positive cumulative impacts to Hen Harrier from UWF Replacement Forestry and UWF Other Activities (Upperchurch Hen Harrier Scheme). Moderate and positive impacts to terrestrial habitat and general bird species will also occur due to habitat enhancements.

*Council decision*

- 10.6.19. Under the second reason for refusal attached to the notification of decision to refuse permission, Tipperary County Council is not satisfied that the proposed development, alone or in combination with other projects, would not result in significant residual negative impacts on the environment with respect to biodiversity, including Hen Harrier and Bat species. The first reason for refusal also refers to the level of relevant survey information lodged with the application in relation to baseline ecological conditions for Hen Harrier on lands contiguous to the SPA. The Planning Authority consider that it cannot be ruled out that the proposed development would not lead to a reduction or loss of suitable foraging habitat of the Hen Harrier.
- 10.6.20. The applicant had been invited to submit further information to consider the impacts of time since the collation and assessment for the EIS and EIA accompanying the 2013 application and to provide any updates and revisions accordingly. However, the applicant's response did not address the concerns of the Planning Authority. It was noted that the sensitivity rating of Hen Harrier is very high and therefore up to date surveys are required to assess the potential level of impact to a high degree of certainty. It was considered that there is potential for effects on Hen Harrier due to reduction/ loss of foraging habitat outside the SPA from disturbance/ displacement of



nesting/ roosting due to noise and human activity during the construction and operational phases without adequate assessment of lands on the western boundary close to the SPA.

- 10.6.21. The Department of Culture, Heritage and the Gaeltacht in its submission on the further information response highlighted that the key question is the extent to which Hen Harrier breeding within the SPA are dependent upon any suitable hunting habitat within the site of the proposed windfarm. This submission refers to an EIAR statement that several Hen Harrier nest locations were within 1km of the construction boundary. The importance of establishing whether significant use by Hen Harrier on the western side of the proposed windfarm adjoining the SPA is emphasised.
- 10.6.22. The applicant submitted a revised EIAR, Environmental Management Plan and Appropriate Assessment Report (Screening and NIS) with the first party appeal. The first party appeal also includes a detailed response to the issues raised by the Department in respect of Hen Harrier. In this regard, it is noted by the applicant that there are no Hen Harrier nests either inside or outside the SPA within 2km of the UWF Related Works boundary. The nests that were identified within 1km of the construction works boundary related to the 2018 UWF grid connection planning application. Surveys for the current evaluation (2016-2018 inclusive) show that the closest active nest within the SPA to the UWF Related Works is 4.8km to the west of the nearest point of the construction works boundary. The closest nest outside the SPA is 4.5km to the south of the nearest point of the construction works boundary. The nearest permitted turbine to the SPA is at a distance of 490m.
- 10.6.23. It has therefore been evaluated by the applicants that the parts of the application site adjacent to the SPA are unsuitable as hunting habitat; habitat in general within 2km of UWF Related Works is of limited use as agriculture predominates and habitat within the SPA offers greater suitability for foraging Hen Harrier than that outside of the SPA. Reference is also made to the load-size effect of carrying prey substantial distances from foraging grounds to the nest. Studies have shown that most foraging by Hen Harrier takes place in close proximity to the nest. Thus, Hen Harrier do not rely on hunting habitat within UWF Related Works construction boundary. Surveys carried out from March 2015 and April 2017 have confirmed that usage of the site has remained low, in line with the original evaluation in 2013. Only one bird was

recorded within the consented Upperchurch Windfarm boundary in March 2015 and no observed flight paths intersected the locations of UWF Related Works.

- 10.6.24. In terms of the level of available survey information for Hen Harrier and other species, Appendix 8 sets out detailed biodiversity data and supplementary information. This includes scoping and consultation, which commenced in August 2015 for the Whole UWF Project; a desktop review including records of legally protected and rare species held by the NPWS, national landscape suitability maps for bats and watercourse classifications; survey results; Hen Harrier surveys (March 2015 to April 2017); Hen Harrier flight lines as surveyed (March 2015 to March 2017); Milestone & Inchivara windfarm development pre-construction Hen Harrier surveys (2015); and confidential bat survey information. A review of the desktop information and further consultation with local experts and NPWS was carried out by the applicant in advance of the appeal submission.
- 10.6.25. I am satisfied that sufficient baseline surveys have been conducted to accurately determine any usage of the UWF Related Works site by Hen Harrier and other species. The available survey information goes beyond what might normally be submitted with a first-time planning application in view of the fact that there are previous records going back to 2013. This provides a longer-term picture of the usage of the site by Hen Harrier, which has continued to remain low as was the case with the original evaluation in 2013. As noted by the applicant, this confirms that the site does not present an unexpectedly higher attraction for Hen Harrier that might encourage the species further from its nest. Surveys were conducted up to 2018 and reviews were carried out in 2019. I consider that this information is suitably up-to-date having regard to the lodgement dates of the planning application, further information and the appeal submission dates. It should be noted that throughout the EIAR the passage of time has been considered for each relevant environmental factor.
- 10.6.26. Tipperary County Council was also not satisfied within its second reason for refusal that the proposed development, in combination with other projects, would not result in significant residual negative effects with respect to biodiversity, including bat species. In response to this aspect of the reason for refusal, the application provided additional information on bats within the first part appeal.

- 10.6.27. The Planning Authority's external consultant considered that there were deficiencies with respect to bat activity assessment; methodology for screening out bridges along the cable route; the location of roosting sites in proximity to the future site office; and details of bat boxes within the habitat management plan. In response, the applicant confirmed that the scoping and methods for bat surveys are outlined in the Revised EIAR. It is highlighted that Bat Conservation Trust Guidelines (2016) provide for flexibility in survey methods. Automated bat detectors were considered most appropriate for measuring bat activity at potential commuting routes/ feeding areas as they allow for sampling throughout the night and sites are sampled concurrently.
- 10.6.28. With respect to screening of bridges, it is noted by the applicant that visual inspections were carried out for bridges within 150m of the Whole UWF Project material haul routes. Watercourse crossing were categorised and assigned a roost suitability category following inspection. Most bridges are concrete culverts with no crevices suitable for bats and other stone bridges were screened out as having no crevices of suitable dimensions. All bridges were evaluated as having negligible suitability for bats or were along routes where no bridge strengthening/ modifications are required.
- 10.6.29. The roosting sites at the proposed site office comprise a derelict house and farm buildings. The use of the derelict dwelling as a site compound forms part of the consented Upperchurch Windfarm permission. Notwithstanding this, there will be no destruction or disturbance of any bat roost or artificial lighting near roost entry/ exit points. On this basis, mitigation measures are not considered necessary and a derogation licence will not be required. Bat boxes will only be required where trees with suitability for bats will be felled. Measures for installation of bat boxes can be described in detail in a habitat management plan agreed prior to construction.
- 10.6.30. The Revised EIAR (January 2019) submitted with the first party appeal contains a number of amendments to the May 2018 EIAR that address the concerns of the Planning Authority and observers.
- 10.6.31. This includes additional information on the potential effects on Hen Harrier, and in particular ex-situ SPA effects. Further detail is provided with respect to baseline surveys for bats and badgers and project design environmental measures have been updated accordingly. The cumulative effects of UWF Related Works with all other

elements of the Whole UWF Project, including new UWF Grid Connection proposal is now fully incorporated and the passage of time in the baseline environment is assessed for each relevant environmental factor.

10.6.32. 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. Issues raised by observers relating to cumulative impact (James & Tanya Embleton), compliance with the EIA Directive (Peter Sweetman with and on behalf of Paul & Edel Grace), and project splitting and availability of information (Emer Ó'Siochrú & Toal Ó'Muiré) has been addressed in full. The proposed development has been assessed cumulatively with all other aspect of the Whole UWF Project and any other relevant projects, and as noted in Section 9.6 above, the law does not require that planning permission for all integral parts of a large project must be obtained at the same time, or as part of a single application to one consenting authority. 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.

10.6.33. 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 Related Works and UWF Grid Connection are located 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. UWF Related Works are mostly located within the River Suir surface water catchment and the Templemore A groundwater catchment. The UWF Grid Connection and a small section of UWF Related Works are within the River Shannon catchment. 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 Related Works requires the laying of c. 17.9km of cabling through agricultural and forestry lands and across public roads. Approximately 62% of the internal windfarm cabling will be located under consented windfarm roads or roads proposed for realignment. UWF Grid Connection works will take place from a 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. Proposed haul route works will include the widening of road verges (1,710m); temporary removal and reinstatement of 1,035m roadside boundaries; permanent removal of 25m of roadside boundary and construction of 290m of temporary access roads on private lands. The proposed telecom relay pole comprises the construction of a small compound and short length of access road. Ancillary works will include the change of use from 'agriculture' to 'forestry and agriculture' at the UWF Replacement Forestry entrance; temporary access road; forestry felling (0.3 ha); hedgerow removal and replanting; fencing; temporary storage of excavated materials; and reinstatement of construction works areas.

- 10.7.6. A total of 32 no. watercourse crossings are proposed within the UWF Related Works area and 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. Temporary roads will be constructed upslope of cable trenches and existing roadside drainage will be piped to maintain flow where necessary.
- 10.7.7. During UWF Related Works approximately 4,750 m<sup>3</sup> of topsoil, 6,670 m<sup>3</sup> of subsoil, 360 m<sup>3</sup> of rock and 50m<sup>3</sup> of spoil will be excavated. Approximately 930 m<sup>3</sup> will be permanently stored in berms and the remaining will be temporarily stored before backfilling, reinstatement and landscaping. Approximately 4,600 m<sup>3</sup> of crushed stone will be imported. 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 (23,810 m<sup>3</sup>) will be removed to a licenced facility. This element of the project will also require excavation of 2,470 m<sup>3</sup> of topsoil, 1,570 m<sup>3</sup> of subsoil and 30 m<sup>3</sup> of rock. Approximately 3,770 m<sup>3</sup> of excavated material will be permanently stored around Mountphilips substation and along the permanent access road. Emissions may arise during construction from dust, vehicle exhausts, noise, vibration, light and electromagnetic radiation.
- 10.7.8. 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 Foilneman and UWF Other Works will include haul route activities, Upperchurch Hen Harrier Scheme and monitoring activities.
- 10.7.9. When completed and operational, the Upperchurch Windfarm will produce 150 million kWh of renewable energy.

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

- 10.7.10. The predicted impacts on land are summarised as follows:
- **Agriculture:** One third of construction works areas will be located on agricultural lands, with 7.2 hectares of land within construction works areas spread across 41

agricultural landholdings – these landholdings have a total area of c. 1,133 hectares.

- No tillage farming in UWF Related Works study area – all farmed area under permanent grassland.
- Loss of connectivity between parcels of land due to the presence of works and associated works area boundaries.
- Temporary loss of use of lands within construction works areas for a short period afterwards until works areas have re-vegetated.
- Cumulative impact to agricultural and forestry lands of UWF Grid Connection, together with other elements of the Whole UWF Project is evaluated in the EIAR as being not greater than imperceptible.
- About half of UWF Grid Connection works area situated on agricultural lands (5.9 ha).
- Very small scale of land area subject to works – 5% of farmed area on average for all landholdings for Whole UWF Project. Alternative access also available on many landholdings.
- No material changes in landholdings in Upperchurch Windfarm since 2014 – descriptions in 2013 and 2014 remain relevant.
- **Forestry** – 6% of UWF Related Works area will be located on forestry lands (1.3 ha spread across six forestry landholdings).
- UWF Grid Connection not located on any forestry plots.
- Neutral positive land use change from 6 ha of agricultural land changing to forestry at UWF Replacement Forestry site.
- Passage of time – while 9 ha of forestry within Upperchurch Windfarm site have been felled since 2013, overall, the forestry within the Upperchurch Windfarm area is predominantly in growth stage and no new agricultural lands have been planted in the intervening period. No material changes in forestry landholdings.
- Loss of use and connectivity of landholdings – forestry lands within construction works area will be fenced off and unavailable for forestry use during construction and in early operational stage until vegetation has re-established.

- Throughout the Whole UWF Project, construction works are located on 11.1 ha of forestry lands, spread over six landholdings – 10% of lands subject to works on forestry landholdings, impact reversible and alternative access available on forestry plantations.

*Mitigation Measures for Land*

- **Agriculture** – Project design environmental protection measures PD05 to PD07.
- Best Practice Measures RW-BPM-27 and RW-BPM-28.
- **Forestry** – Project design environmental protection measures PD05 and PD07.
- Best practice measures RW-BPM-27 (landowner and land-user liaison) and RW-BPM-28 (minimise disturbance and damage to land).

*Residual Impacts for Land*

10.7.11. No significant residual impacts.

*Predicted Impact of the Proposed Development on Soils*

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

- Overall, the soil, subsoil and bedrock at the majority of the UWF Related Works study area can be considered to have low to medium geological importance.
- **Local soils, subsoils and bedrock** - No changes in soil, subsoil and bedrock in Upperchurch Windfarm area since 2013 and 2014 – poorly draining peaty soils and well-draining soil over sandstone and shale till. Most peat removed due to past agricultural improvements. Peat remains in some forested areas and depth to bedrock ranged from 1.2m to 2.9m.
- *Excavation & relocation of soils, subsoils and bedrock* – 11,830 m<sup>3</sup> of material excavated within UWF Related Works area.
- ~930 m<sup>3</sup> of overburden will be permanently stored within windfarm and remainder will be reinstated within works area.
- Whole UWF Project will involve excavation and relocation of up to 146,110 m<sup>3</sup> of overburden and the excavation of 43,390 m<sup>3</sup> of bedrock – magnitude considered to be moderate adverse as it will be over a large geographical area.



- *Soil and subsoil compaction* – Compaction due to construction traffic within UWF Related Works area – negligible magnitude give small size within overall landholding.
- Within Whole UWF Project, compaction will be limited to construction works area (69.1 ha) which accounts for <3% of total landholding area.
- *Soil & topsoil erosion* – as a result of construction traffic and natural processes such as rain and wind action on exposed soil and subsoil. Considered that magnitude will be negligible given small area of construction works area within overall landholding (<2%). Construction works area accounts for <3% of total landholding for Whole UWF Project and therefore magnitude will be negligible.
- *Contamination by oils, fuels & chemicals* – only relatively small volumes of fuel on site at any one time and therefore no significant spillages will occur. Significance of impact will be imperceptible.
- Location of UWF Grid Connection is predominately along public roads which are asphalt/ bitumen surfaced.
- Subject to implementation of mitigation measures, including storage of fuels in designated area, impacts will be imperceptible.
- *Contamination by cement-based products* – highly alkaline and corrosive and can have impacts specifically on soils and subsoils. Effects will be largely localised to soil in direct contact area with cementitious material.
- Cement based compounds will be used at Mountphilips substation, end masts, along the grid connection, turbine foundations and substation and at the telecom relay pole.
- Subject to implementation of mitigation measures, such as prevention of batching of wet cement, cumulative impact will be slight.
- **Lower River Shannon SAC** – no potential for UWF Related Works to cause impacts to the Lower Shannon SAC. Closest point of SAC is 1.5km to the south-west.

- Construction of grid connection has potential to cause effect on soils and geology within the SAC. There are six locations where the 110kV UGC crosses through the SAC boundary.
- Route of 110kV UGC is underlain by asphalt/ bitumen and hardcore and then mineral subsoil – majority of excavated material will be spoil. Construction works will not directly affect the qualifying interests of the SAC.
- *Excavation and location of soil, subsoil and bedrock* – all excavations will be within the road pavement and there is no potential for effects to soils in the SAC.
- *Contamination from oils, fuels and chemicals* – no storage of oils or fuels within the SAC and there is low potential for contamination effects to soils at six points where 110kV UGC is within the SAC.
- *Contamination from cement based compounds* – use of cement within SAC will be limited to the placement of semi-dry lean mix concrete in the cable trenches in the public road. Small amount of cement involved at six locations in SAC, (<240 m<sup>3</sup>).

#### *Mitigation Measures*

- Project design environmental protection measures PD05 to PD07, PD10, PD15 and PD18 to PD20.
- Best practice measures RW-BPM-07, RW-BPM-08, RW-BPM-10 and RW-BPM-11 for protection of local soils, subsoils and bedrock.

#### *Residual Impacts*

10.7.13. No residual impacts.

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

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

- **Local surface water bodies** – majority of watercourse crossings (26 of 32) within UWF Related Works are within Clodiagh River catchment. ~75% of watercourse crossings relate to forestry or agricultural drains.
- EPA Q Status of surface water bodies at the study area is typically good.

- Only six natural stream crossings of note within UWF Related Works area – sampling at five locations at larger Class 1 & 2 watercourse crossings are consistent with waterbody status of high to good.
- There are no mapped fluvial or pluvial flood zones and UWF Related Works have no potential to cause increased flood risk.
- Baseline – With the exception of the Inch (Bilboa)\_010, Shannon Regional catchment waterbodies are reported to be not at risk from water quality impact or morphological impacts.
- With the exception of the Clodiagh\_0101, Suir Regional catchment waterbodies are reported not at risk from water quality impacts or morphological impacts. Clodiagh River at risk from morphological impacts and forestry related impacts- potential negative trend relating to water quality or morphology.
- Majority of UWF Grid Connection located in River Shannon surface water catchment and the Mulkear River regional catchment.
- 63 watercourse crossings along UWF Grid Connection (58 along public road). Q-Value for main watercourses are typically good to high, with a moderate Q-Value reported at a tributary of the Bilboa River. Water sampling results were consistent with the waterbody status.
- Fluvial flooding along the UWF Grid Connection is relatively localised to the larger stream and river crossing locations – access to these crossing locations will only be required during the construction stage.
- Watercourses of fisheries value within UWF Replacement Forestry will be crossed using existing crossing structures.
- Drainage in and around Upperchurch Windfarm is dominated by forestry and agricultural drains.
- Passage of time – Comparison of water quality sampling results and EPA monitoring data used for the 2013 EIS compared to 2018 EIAR demonstrates that water quality in the windfarm area has improved slightly. Change not considered material.

- *Morphological impacts to watercourses due to in-stream works* – Instream works required at 25 watercourse crossings within UWF Related Works (9 permanent crossings). Most watercourses are drains or of low ecological importance and are located over a relatively large geographical area – magnitude of impact considered to be small adverse.
- In-stream works for both UWF Related Works and UWF Grid Connection at the Clodiagh\_010.
- 79% of watercourses crossings along UWF Grid Connection are Class 4 or Class 3 low ecological importance and most are already culverted.
- Cumulative magnitude of impact for Whole UWF Project will be small adverse as morphological effects will be distributed between two regional catchments and within several local surface water bodies.
- *Surface water quality impacts during conifer plantation tree felling* – due to small scale of overall felling within UWF Related Works area, and the fact that felling areas are relatively remote from each other, magnitude of impacts is considered to be negligible.
- No felling associated with UWF Replacement Forestry or UWF Grid Connection.
- 4.35 ha will be felled to accommodate Upperchurch Windfarm mostly in Clodiagh catchment – assessed in 2013 EIS to be not significant.
- Whole UWF Project has potential to impact on surface water bodies in the River Suir catchment only – felling areas relatively small and located across several sub-catchments so effects will be localised. Magnitude of impact considered to be negligible to small adverse.
- *Surface water quality impacts due to earthworks* – potential for water quality effects within UWF Related Works during excavations. Storage of overburden and erosion of these storage areas could result in surface water quality impacts locally.
- Due to transient and spread out nature of works and the fact that most local watercourses are drains or marginal watercourses, magnitude of impact considered to be small adverse.

- All excavations along UWF Grid Connection along public road will be removed to landfill as spoil.
- No requirement for rill ploughing or earthworks during UWF Replacement Forestry.
- Whole UWF Project has potential to impact on surface water bodies in both the River Shannon and River Suir catchments – localised effects are likely to be transient in nature, and distributed over a large geographical area.
- *Water quality impacts from dewatering of excavations* – localised impacts may occur as a result of pumping out surface water inflows during very wet periods.
- No significant excavation dewatering is expected from internal windfarm cabling, the Upperchurch Windfarm or UWF Grid Connection.
- Any pumped water will be treated then discharged at a location away from any local watercourse.
- Throughout Whole UWF Project, effects associated with excavation dewatering will be rare, isolated within separate catchments and brief in duration – cumulative magnitude considered negligible.
- *Impact evaluation table: surface water quality impacts due to watercourse crossing works* – due to relatively minor nature of watercourses being crossed and the distributed and transient nature of UWF Related Works and UWF Grid Connection within local surface water catchments, magnitude is considered to be negligible to small adverse.
- Throughout Whole UWF Project, water quality effects will be dispersed between two regional catchments and within several local sub-catchments – impact negligible to small adverse.
- *Surface water impacts due to contamination by fuels, oils and chemicals* – any spills or leaks likely to be minor and indirect effects likely to be localised.
- Cumulative impacts are likely to be negligible given the distributed nature of works within two regional surface water catchments and over several sub-catchments, and given that only small volumes of fuel/ oil will be present on-site at any one time.

- *Water quality impacts from cement based compounds* – use limited to telecom relay pole foundation and nine public road crossings within UWF Related Work representing small scale use of concrete.
- Cement used in concrete for UWF Grid Connection and consented turbine foundations and substation – any spills or leaks are likely to only occur occasionally with incidents being small and isolated.
- *Increased flood risk* – Run-off from new permanent infrastructure may result in increased flow in watercourses – run-off control measures, sizing of culverts for peak flood flows and distributed nature of works will result in negligible cumulative impact.
- *Surface water quality impacts due to run-off from permanent hardstanding surfaces* – no potential for cumulative impacts with UWF Grid Connection or UWF Replacement Forestry due to absence of permanent hardstanding in local waterbodies affected by UWF Related Works.
- There will be relatively small permanent footprints within individual catchments, and the fact that silt control measures will be included at all permanent hardstandings, the magnitude of impact is considered negligible.
- **Local Groundwater Bodies** – UWF Related Works and UWF Grid Connection exist within the Slieve Felim GWB and the Templemore A GWB. Both GWBs in the area of UWF Related Works and UWF Grid Connection comprise of poor bedrock aquifers. Groundwater quality in both GWBs is assigned 'good status'.
- There have been no material changes in the baseline environment and descriptions in the 2013 and 2014 Upperchurch Windfarm documents.
- *Groundwater quality impacts due to contamination by fuels, oils and chemicals* – groundwater under construction works area is a potential receptor from plant and equipment throughout Whole UWF Project. Only small volume will be present on site at any one time and low importance of local aquifer will give rise to a negligible impact magnitude.
- Any accidental minor spillage will likely be absorbed by underlying soil/ subsoils – effects will be minor and localised.

- Given transient and distributed nature of works within two separate groundwater bodies, the localised groundwater flow regime and that fact that only small volumes will be present at any one time, the cumulative magnitude of impact throughout the Whole UWF Project is considered to be negligible.
- *Groundwater impacts from cement based compounds* - Throughout Whole UWF Project, there will be localised and temporary change in groundwater quality at the footprint of development areas.
- Cumulative impacts considered to be negligible as above.
- *Groundwater level (quantity) impacts from dewatering of excavation* – due to elevated position of windfarm site, the shallow nature of the excavation works and the absence of groundwater in trial holes, no effects on local groundwater levels are expected.
- Excavations associated with Whole UWF Project are spread over two groundwater bodies. No dewatering is expected for UWF Related Works and UWF Grid Connection and minimal dewatering is likely to be required for Upperchurch Windfarm.
- **Local Wells & Springs** – potential limited due to shallow depth and temporary nature of excavations.
- No source protection zones mapped in the study areas (UWF Related Works and UWF Grid Connection). GSI database showed only four wells within 100m of UWF Related Works located upgradient of construction works. GSI database also showed four wells within 100m of UWF Grid Connection.
- Passage of time – No wells or springs within 100m downslope of Upperchurch Windfarm works and no new wells have been bored in recent years. Baseline environment and descriptions in 2013 and 2014 remain relevant.
- **Lower River Shannon SAC** – Very small extent of UWF Related Works within Bilboa River catchment (Shannon).
- Majority of UWF Grid Connection located within River Shannon surface water catchment and within the SAC at six locations

- UWF Grid Connection project overlaps with UWF Related Works cumulative evaluation study area in the Inch (Bilboa\_010 and Bilboa\_10 waterbodies with the Bilboa catchment).
- Passage of time – review of EPA data shows that there has been no material change in water quality in the Bilboa catchment. Descriptions in 2013 and 2014 documents remain relevant.
- *Surface water quality impacts due to tree felling* – no tree felling for UWF Related Works or any element of the Whole UWF Project in Shannon regional catchment.
- *Surface water quality impacts due to earthworks (excavations and overburden storage)* – temporary storage of 498 m<sup>3</sup> of Lower River Shannon catchment is relatively small scale and magnitude of impact will be negligible.
- Total overburden storage within River Bilboa catchment will be up to 9,080 m<sup>3</sup> permanently and up to 11,400 m<sup>3</sup> temporarily – erosion of these storage areas could result in surface water quality impacts locally. No storage of overburden material for UWF Grid Connection within River Bilboa catchment.
- Up to 3770 m<sup>3</sup> of overburden from excavations for Mountphilips substation will be permanently stored as linear berms – due to large downstream distance, and assimilative capacity provided by local watercourse, along with the distributed and transient nature of works upstream of SAC, magnitude of impact is considered negligible.
- *Surface water quality impacts from dewatering of excavations* – No dewatering expected within UWF Related Works cabling based on trial pits.
- No significant excavation dewatering expected for UWF Grid Connection as route is largely along carriageway of public road. Any pumped water will be treated using mobile water treatment train and silt bag prior to discharge along roadside verge.
- *Surface water quality impacts from watercourse crossing works* – Only one watercourse crossing in relation to UWF Related Works. No in-stream works are required at this crossing and no effects on SAC are expected.



- Approximately 27.4km of the 28.9km 110kV UGC is within the Shannon catchment. In-stream works required at 26 watercourse crossings which largely require culvert replacement – given distributed and transient nature of works upstream of SAC, impact is considered negligible.
- *Water quality impacts from fuels, oils and chemicals* – only 1.7km of internal windfarm cabling located in River Shannon catchment and effects on downstream SAC are unlikely due to small volumes on site at any one time and the transient nature of works.
- Majority of 110kV UGC located in Shannon catchment – and spills or leaks like to be minor, isolated and occurring rarely. Worst-case effect on SAC is considered to be negligible.
- *Water quality impacts from cement-based compounds* – No cement based compounds required for UWF Related Works where it overlaps the catchment of the Lower River Shannon SAC.
- Worst-case effects on local surface water bodies along UWF Grid Connection has been assessed to be negligible. Volume of cement used within SAC boundary will be small (c. 250m<sup>3</sup>).
- Cumulative effects relate to concrete used in consented UWF turbine foundations, grid connection and Mountphilips substation – in-combination impacts negligible as majority of Upperchurch Windfarm within Suir catchment and majority of grid connection within Shannon catchment.
- *Surface water quality effects from suspended sediments* – effects on SAC likely to be negligible from UWF Related Works (1.7km of 17.9km of cabling within Shannon catchment).
- Due to large geographical spread and transient nature of works with Shannon catchment along UWF Grid Connection, as well as the distance of the majority of works to the SAC and the project design measures, magnitude of impact likely to be negligible.
- Effectiveness of watercourses along the 110kV UGC (78% drains or marginal headwater watercourses with low flows) as surface water flow paths to the downstream SAC is limited.

- Measures outlined in the EIS and within the Sediment and Erosion Control Plan will ensure the development of the wind farm will not have a significant negative impact on water quality.
- **Lower River Suir SAC** – Majority of UWF Related Works located within River Suir catchment. Of the 31 watercourse crossings within the Suir catchment, 26 are at least 12km upstream and five are at least 3km upstream of the SAC.
- Grid connection overlaps the UWF Related Works cumulative evaluation study area in the Clodiagh\_010 local waterbody.
- UWF Replacement Forestry is within Suir catchment at least 12km upstream from SAC and one watercourse crossing associated with Upperchurch Windfarm is at least 12km upstream of SAC.
- Passage of time – no changes in land use or land cover and no new sources of water pollution on Upperchurch Windfarm site in recent years. No material change in water quality in Clodiagh catchment.
- *Surface water quality impacts due to tree felling* – 0.3 ha to be felled located across two sub-catchments within UWF Related Works area – impacts on SAC likely to be negligible due to small felling area and downstream distance to SAC (>12km).
- No forestry felling associated with UWF Replacement Forestry or UWF Grid Connection.
- UWF Related Works felling (0.3 ha) will be felled separately from Upperchurch Windfarm felling (4.35 ha) – potential for in-combination effects is negligible.
- *Surface water quality impacts due to earthworks* – erosion of overburden storage areas could result in water quality impacts locally. Impacts considered negligible considering the transient and distributed nature of works and the large downstream distance to the SAC.
- Only 0.6km of UWF Grid Connection is located in River Suir catchment and is at least 11.5km upstream of SAC.
- Throughout Whole UWF Project, cumulative minor water quality effects are likely to be brief to temporary. Impact magnitude likely to be negligible.

- *Surface water quality impacts from watercourse crossing works* – Instream works required at 25 crossings within UWF Related Works Area (75% drains). Considered that distributed and transient nature of crossing works and location of SAC >12km downstream will give rise to negligible impact magnitude.
- No impact on Lower River Suir SAC due to small scale of UWF Grid Connection works and the fact that watercourses are only drains.
- Requirement to carry out 31 watercourse crossings in total within River Suir catchment (two associated with UWF Grid Connection).
- Crossings required for 110kV UGC, UWF Related Works and Upperchurch Windfarm will not be completed at the same time – potential for significant in-combination effects are negligible.
- *Water quality impacts from fuels, oils and chemicals* – spills or leaks of oils and fuels relating to works are likely to be minor (worst case), isolated and occurring rarely – magnitude of impact in SAC likely to be negligible. River Suir located more than 12km downstream. In-combination magnitude also considered negligible due to distributed nature of works.
- *Water quality impacts from cement-based compounds* – limited to telecom relay pole and nine road crossings with UWF Related Works area. No impacts on surface water quality or downstream SAC are anticipated. Potential in-combination effects from UWF Grid Connection, consented turbine foundations and substation unlikely due to small volumes of cement. Potential for isolated incidents will be managed under Upperchurch Windfarm Environmental Management Plan.
- **Local water dependent habitats** (wet grassland and wet heath which supports Devils Bit Scabious and Marsh Fritillary) – Marsh Fritillary has been mapped in wet grassland and wet habitat close to internal windfarm cabling at Section SW13/ SW14.
- *Drainage of marsh fritillary habitat* – Wet grassland/ wet heath has been mapped along the internal windfarm cabling for 170m. Wet habitat mainly exists upslope of works and therefore effects are likely to be negligible. Natural surface water /

groundwater drainage regime in the area is to be maintained by the windfarm drainage.

*Predicted Impact of the Proposed Development on Air*

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

- **Local residents and community** – there are 41 residences within 350m of UWF Related Works study area; 33 residences within 50m of haul routes; and nine residences within 100m of internal windfarm cabling.
- There are 866 residences and 91 community facilities within 350m of UWF Grid Connection works area; 371 residences and 68 community facilities within 50m of haul routes; and 532 residences and 74 community facilities within 100m of the 110 kV UGC.
- *Increase in airborne dust (construction stage)* – potential for emission of dust from excavation and backfilling, storage and handling of material on site, and delivery of material.
- Potential for cumulative effects with Upperchurch Windfarm at Knocknabansha/ Knockmore/ Knockcurraghbola Crownlands/ Knockcurraghbola Commons area – sequential timing of construction will ensure that local residences are not affected by multiple construction works being carried out at the same time.
- Potential for cumulative in-combination effects of the Whole UWF Project limited to local residents located along locals roads in Knockmaroe/ Knockcurraghbola Crownlands/ Knockcurraghbola Commons area – sequential timing of construction works built into project design, low risk human health and dust soiling impacts, temporary duration of works and reversibility of impact.
- *Increase in ambient noise levels* – Realistically, construction noise will not exceed the construction limit beyond 60m. There are only 9 no. houses at which guideline thresholds will be exceeded. Exceedances will generally be less than one week, effects will be reversed upon completion and works will be carried out during daytime hours.
- No dwellings within 350m of turbine hardstands.

- Potential for cumulative effects throughout the Whole UWF Project limited to 23 residences which are within 350m of construction works – there will be sequential timing of construction works, and works will be temporary in nature, reversable in terms of impact and carried out during daytime hours. NRA threshold limits will be exceeded at some locations.
- *Increase in ambient noise levels* – nearest residence is 385m from Mountphilips substation. Noise level will be well below the low background noise threshold.
- Within permitted windfarm, it was concluded that the level of ambient noise increase will be within permitted levels for the most part, even in a worst case scenario. Permitted substation will emit similar noise levels to Mountphilips substation and nearest dwelling is c. 360m.
- *Increase in ambient electromagnetic field levels* – Within UWF Related Works area there will be some increase in magnetic field levels at nine residences within 100m of internal windfarm cabling. No increase in electric fields will occur due to complete screening of fields by metallic sheath surrounding cables and backfill materials.
- There are 536 local residents or community facilities within 100m of electric parts associated with Whole UWF Project – very low to low magnitude of new magnetic field levels in local residences that will be below EU EMF limits.
- 110kV UGC will be completely screened so that there are no in-combination effects at 1 no. local residence with the existing 220kV OHL.
- ***Air (transient people)*** – *Increase in ambient EMF levels*: Any farm or forestry workers, walkers and cyclists or road users within 100m of operational windfarm cables will be exposed to increased magnetic field levels. No increase in electric fields due to complete screening. Magnitude will be very low.
- Worst case possible in-combination ambient electric and magnetic fields levels will be directly over the 110kV UGC and at the internal windfarm cabling trenches located in the same area in Knockmaroe and on private road in Knockcurraghbola Crownlands near the permitted sub-station. Magnitude is described as very low, low and medium. Exposure will be momentary to brief.

- Electrical equipment at Mountphilips substation will be greater than 100m from the 110 kV UGC and the 220kV OHL. Medium cumulative magnitude of magnetic fields at Mountphilips under the 110kV and 220 OHL. Exposure of transient people will be momentary to brief.
- Passage of time – Ormond Way Cycle Route developed since 2013 and Ormond Way Walking Route currently under development – evaluations in Revised EIAR take account of additional waymarked trails.
- **Climate** – Upperchurch Windfarm will produce renewable sustainable electricity from wind, off-setting 128,118 tonnes of greenhouse gases each year.
- Consideration of passage of time – there have been changes in the baseline environment since 2013 involving Ireland’s annual greenhouse gas emissions and compliance with EU Commission targets.
- There are 233 operational windfarms in Ireland, which together off-set approximately 6.2 million tonnes of greenhouse gas each year.
- *Increase in renewable energy production* – 22 no. turbines will generate approximately 150 million kWh of renewable energy per annum, thus reducing future CO<sub>2</sub> emission from fossil fuels.
- Ireland is more likely to meet its renewable energy target of 40% electricity production from renewables by 2020 and transition to a low carbon economy.

#### *Mitigation Measures*

- **Local surface water bodies** - Project design environmental protection measures PD07 and PD09 to PD25.
- Best Practice Measures RW-BPM-01, RW-BPM-02, and RW-BPM-04 to RW-BPM-11.
- Surface Water Management Plan will ensure that work is carried out with minimal impact on the surface water environment.
- **Local groundwater bodies** - Project design environmental protection measures PD10, and PD18 to PD21.
- Best Practice Measures RW-BPM-07 and RW-BPM-08.

- **Local wells & springs** - Project design environmental protection measures PD07, PD19, PD20 and PD21.
- Best practice measure and Surface Water Management Plan will provide further protection to local wells and springs.
- **Lower River Shannon SAC** - Project design environmental protection measures PD07, PD09, PD10 and PD12 to PD25.
- Best Practice Measures RW-BPM-01, RW-BPM-02, RW-BPM-04, RW-BPM-05 and RW-BPM-07 to RW-BPM-11.
- Water quality and the existing drainage regime will be managed under a Surface Water Management Plan.
- **Lower River Suir** - Project design environmental protection measures PD07, and PD09 to PD25.
- Best Practice Measures RW-BPM-01, RW-BPM-02, and RW-BPM-04 to RW-BPM-11.
- **Local water dependent habitat** - Project design environmental protection measure PD07.
- **Air (local residents & community)** - Project design environmental protection measures PD01 and PD03.
- Best Practice Measures RW-BPM-29 and RW-BPM-31.
- **Air (transient people)** – RW-BPM-29 and RW-BPM-31.
- **Climate** – RW-BPM-32: Measuring operational electricity production

*Residual Impacts*

10.7.16. No residual impacts.

**Conclusions on Land, Soil, Water, Air and Climate**

10.7.17. It would appear that all lands are necessary for the construction and operational phases of the proposed development. The main potential effects to land relate to the temporary and permanent loss of the use of lands and the loss of connectivity between land parcels. Agriculture and forestry are the predominant land uses;

however, the impacts on these land uses throughout the Whole UWF Project will not be greater than imperceptible. The extent of lands used for the subject works will be very small in the context of the size of agricultural and forestry holdings. Impacts will be reversible upon completion of works and alternative accesses will be available. Furthermore, mitigation measures and best practice measures will be put in place to minimise disturbance to land. In terms of 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.

10.7.18. Soils in the area comprise mainly of mineral or peaty topsoil over glacial tills with underlying bedrock of volcanic meta-sediments. The cumulative impacts of Upperchurch Windfarm and the grid connection on local soils, subsoils and bedrock are considered to be slight-moderate in relation to soil excavation/ relocation impacts, slight in relation to potential contamination by cement-based compounds, and imperceptible in relation to erosion, compaction or fuel/ oil contamination. Approximately 62% of internal windfarm cabling will be along already consented windfarm roads, thereby reducing the overall excavation volume requirements. Soils and geology are of low to medium importance, and impacts will be transient and temporary and limited to construction works areas. All excavations will be fully reinstated and landscaped immediately after completion of works. I would therefore 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.

10.7.19. UWF Related Works and Upperchurch Windfarm are mostly located in the River Suir catchment, with a small area to the west within the River Shannon Catchment. The UWF Grid Connection is mainly within the Shannon catchment with a small area to the east within the Suir catchment. UWF Related Works are within the Templemore A and the remainder of the project is within the Slieve Felim groundwater catchment.

10.7.20. Cumulative impacts to local surface water bodies were evaluated as being imperceptible to slight-moderate, and slight in relation to local water-dependent habitats. The majority of in-stream works with the UWF Related Works area are within drains or marginal watercourses, and overall, works will not negatively affect



the overall WFD surface water body status and the magnitude of effects will not be significant. Most of the watercourse crossings along the UWF Grid Connection are already culverted and local surface water quality effects will be localised. Within the UWF Related Works area, most of the works are more than 50m from a watercourse. Tree felling areas are small scale and remote from each other.

10.7.21. In terms of impacts on groundwater, effects will be minor and localised. Local aquifers have a low to medium importance. There will be no likely impacts on local wells and springs due to the absence of any wells within 50m of UWF Related Works and the fact that all plant and machinery will be working on an impermeable road surface along the UWF Grid Connection.

10.7.22. 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.

10.7.23. It can therefore be concluded that there will be no significant adverse effects to water occurring as a result of the UWF Related Works and cumulatively, the Whole UWF Project.

10.7.24. The EIAR assess 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. There are a number of waymarked trails in the area and the nearest villages are Upperchurch and Kilcommon. 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 haul routes 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 levels 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. A reduction of 20% in non-Emissions Trading Scheme greenhouse gas emissions by 2020 (relative to 2005) is a requirement under the EU Commission's Climate and Energy Package.
- 10.7.28. The UWF Related Works will cause neutral impacts on climate due to the very small scale of emissions and forestry felling during the construction stage. However, cumulative effects of the Whole UWF Project will result in slight positive effects on climate due to the production 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 operation and proposed windfarms in Ireland.
- 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 Related Works project. Taken with other elements of the Whole UWF project, and with other projects or activities, the cumulative effects the proposal are not likely to give rise to significant effects that might warrant a refusal of the proposed development.

## 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. The sensitive aspects excluded from the Built Services topic chapter are public water main and pipes, electricity lines, telephone lines and communication cables, telecommunications masts, gas mains and pipes, wastewater treatment pipes and treatment plants and

private water supply pipes. It was considered that there will be no likely impact on these factors due to project design measures.

- 10.8.2. Chapter 15: Material Assets (Roads) contains sensitive aspects on public roads and road users. Public roads and road users on national and regional roads (not including the R503 or R497) and public roads and road users along the route of any diversions temporarily put in place were excluded from the Roads topic chapter.
- 10.8.3. Local residences and businesses are widely dispersed in the study area and are generally located at the end of water, electricity and telephone networks. The main volume of traffic associated with UWF Related Works will occur during the construction phase. All roads that will provide access to the windfarm are lightly trafficked.
- 10.8.4. Baseline characteristics, cumulative information and an evaluation of impacts on each sensitive aspect are set out, together with mitigation measures and residual impacts.

#### *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 UWF Related Works and the UWF Grid Connection over a distance of 28.9km to a proposed substation on the Killonan – Nenagh 110kV overhead line. The grid connection for the most part will continue under the R503 Regional Route from the consented substation to the new substation at Mountphilips.
- 10.8.6. The UWF Related Works and UWF Grid Connection will also require haul route works including temporary and permanent removal of roadside boundaries; new accesses; construction of a telecoms relay pole; crossing of public roads for internal windfarm cabling; relocation of local overhead services; replacement of watercourse crossing structures; and protection of existing underground services. All road surfaces will be reinstated to local authority specifications.
- 10.8.7. The UWF Grid Connection will be taken in charge by ESB Networks and along with the Mountphilips substation, will become part of the national electricity network. Upperchurch Windfarm is expected to be constructed over a period of 12 months

and approximately 100 people will be engaged in construction works. Another activity associated with the Whole UWF Project is the re-sagging of overhead lines.

*Predicted Impact of the Proposed Development*

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

- As study area is sparsely populated, the number of houses and other properties connected to built services is low.
- *Local residents & community* – within UWF Related Works there are c. 25 properties connected to two lengths of Irish Water mains; c. 92 properties connected to eight overhead electricity lines and two underground cables; and c. 57 properties connected to nine telephone lines.
- Along UWF Grid Connection, c. 1080 properties are connected to 15 lengths of Irish Water main; c. 1500 properties are connected to 75 overhead electricity lines and one underground cable; c. 996 properties are connected to 22 telephone lines; and c. 700 properties are connected to three underground gas lines.
- Passage of time – there have been no new built services installed on stretches of road at the Upperchurch Windfarm site, and no new services built across lands.
- Effects to local residents and community limited to the potential for direct physical damage to lines, pipes or cables during construction. However, there is no potential for either the UWF Related Works or other elements to cause cumulative impacts to local residents and community.
- No impact on Killonan – Nenagh 110 kV overhead line (electricity transmission system).

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

- Imperceptible impact on public roads from UWF Related Works from potential damage to road boundaries and road pavements.
- Adverse impacts to road users due to increased journey times will be imperceptible due to the lightly trafficked nature of the roads, available capacity on roads and temporary nature of construction works.

- Slight cumulative impact to public roads from removal of roadside boundaries and imperceptible in relation to road pavements.
- Imperceptible to slight cumulative adverse impact to road users in relation to deliveries to Upperchurch Windfarm and UWF Grid Connection.
- Passage of time – makeup and number of road users in the vicinity has not changed since the preparation of the 2013/ 2014 planning documents and assessments.
- Traffic and Transport Assessment concludes that the cumulative additional construction traffic associated with Upperchurch Windfarm, UWF Related Works and UWF Grid Connection will have a negligible effect on the network capacity and operation of roads in the study area.

#### *Mitigation Measures*

- **Material assets (built services)** – Project Design Environmental Protection Measures PD01, PD02 and PD 04.
- **Material assets (roads)** – Project Design Environmental Protection Measures PD01, PD02 and PD03.
- Best Practice Measure RW-BPM-30 – Traffic Management Measures.
- Implementation of Traffic Management Plan for public roads.

#### *Residual Impacts*

10.8.10. No residual impacts.

#### ***Conclusions on Material Assets***

10.8.11. Material assets (built services) includes pipes, overhead lines, underground cables and wireless signals. Due to the upland location services are generally located at the end of services networks.

10.8.12. UWF Related Works does not include any 110 kV infrastructure and therefore this element of the Whole UWF Project will not give rise to any impacts such as loss of service due to damage.

- 10.8.13. 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 Killonan 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 Related Works, or cumulatively the Whole UWF Project will not cause any cumulative impacts on any built services.
- 10.8.14. The sensitive aspects evaluated under Material Assets (roads) included public roads and road users. All roads providing access to the UWF Related Works area are lightly trafficked. Temporary accesses will be provided during construction and roads will be widened at a number of locations. Internal windfarm cabling will require the crossing of the public road at nine locations. 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. In this regard, the loss of boundaries, drainage and temporary access points will be reinstated. Any damage to the road pavement will be repaired and trenching locations will be reinstated to the satisfaction of Tipperary County Council. Trenching along the public road will not last for more than 3 days at any one location and traffic management measures will be put in place.
- 10.8.15. Subject to the proper implementation of all other relevant mitigation and best practice measures, I would be satisfied that the UWF Related Works would not have any significant effect on material assets either individually or cumulatively with other elements of the Whole UWF Project, or any other projects or activities.

## 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. No sensitive aspects relating to cultural heritage are excluded from evaluation. Chapter 17: Landscape contains sensitive aspects on landscape character and visual amenity; no sensitive aspects were excluded from this topic chapter.

- 10.9.2. Cultural heritage comprises sites of archaeological, historical or architectural significance within the receiving environment. A total of 65 cultural heritage sites were identified within the UWF Related Works area, including 24 sites listed on the Record of Monuments and Places.
- 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 Related Works comprises a rural upland setting with moderate and steep sided valleys that are predominately in agricultural and forestry use.
- 10.9.4. Baseline characteristics, cumulative information and an evaluation of impacts on each sensitive aspect are set out, together with mitigation measures and residual impacts.

*Characteristics of the Proposed Development*

- 10.9.5. From a landscape and visual perspective, the main impacts will occur during the construction phase of the UWF Related Works and UWF Grid Connection elements of the Whole UWF Project. This includes the creation of compounds, use of machinery, clearing of vegetation and topsoil, stockpiling of materials, reinstatement, etc.
- 10.9.6. 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 erection of the 18m high telecom relay pole, permanent removal of hedgerow and trees, replanting, and 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, lightning protection monopoles and other electrical apparatus.
- 10.9.7. 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 was assessed at the time of this

application and the passage of time has been considered in the current EIAR. In this regard, the now operational Milestone Windfarm was considered cumulatively within the previous assessment and there has been no material change in terms of landscape and visual amenity in the Upperchurch Windfarm area.

10.9.8. 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.

10.9.9. 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*

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

- *Recorded legally protected sites* – UWF Related Works construction area occurs within the zone of notification of one archaeological site (RL6 – Stone Row) and in the operational stage, there are seven sites that will have theoretical visibility of the telecoms relay pole.
- There is a total of 49 archaeological sites on the Record of Monuments and Places (RMP) within the UWF Grid Connection study area. Construction works area occurs within the zone of notification of four of these sites (GL16 – bridge, GL18 – ringfort, GL28 – enclosure and GL34 – copper mine), and operational stage includes four sites that will have theoretical visibility of Mountphilips substation (GL6 - ringfort, GL8 – bawn, GL7 – tower house and GL13 – bowl barrow).
- Passage of time – with exception of Milestone Windfarm (four operating turbines), there has been no material change in the landscape of Upperchurch Windfarm area.
- No impacts expected during construction stage groundwork due to the small scale and design of the wooden relay pole.



- Slight adverse impact due to removal of small sections of townland boundaries, mainly along route of internal windfarm cabling. A total of 235m of boundary will be temporarily removed at 13 townland boundaries and 80m will be permanently removed at 1 townland boundaries to accommodate the Whole UWF Project.
- Any damage to unrecorded subsurface sites is expected to be no greater than slight due to monitoring of works and in the context of agricultural and forestry land uses in the works areas.
- No cumulative effects to Recorded Legally Protected Sites due to separation distance from these sites. No inter-visibility between Mountphilips substation and any other element of the project.
- Cumulative visual impacts to Recorded Legally Protected Sites of the telecoms relay pole and other masts in the area will be negligible. Cumulative impact with the permitted Upperchurch Windfarm turbines and Milestone windfarm turbines will be no greater than the cumulative impact of these structures themselves.

*Predicted Impact of the Proposed Development*

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

- Impact on landscape character includes evaluation of alteration or division of land cover and vegetation patterns; intensification of activity causing a reduction in rural tranquillity; and intensification of built development and reduction in integrity of rural landscape patterns.
- Impact on visual amenity includes evaluation of intensification of activity causing visual disharmony, clutter or complexity (construction stage); and addition of new features or loss of existing features causing visual disharmony, clutter or complexity (operational stage).
- Adverse impacts to landscape character and visual amenity from UWF Related Works will be imperceptible.
- There will be an increase in the amount of above ground built development within the rural landscape once the Whole UWF Project is complete. There will also be minor permanent/ long-term changes to land cover/ vegetation and partial closure of views from UWF Replacement Forestry.

- Cumulative impact of UWF Related Works, Upperchurch Windfarm, UWF Grid Connection and UWF Replacement Forestry will be is considered imperceptible from an intensification of activity and no greater than slight from alternations to land cover during construction.
- Cumulative effect on landscape character and visual amenity during the operating stage is considered to be imperceptible – UWF Related Works will not noticeably contribute to the integrity of rural landscape patterns and addition of visual features.
- Cumulative effects of Whole UWF Project with other projects and activities during operational stage, including Milestone Windfarm, and existing masts will be slight/ not significant.

*Mitigation Measures*

- Project Design Environmental Protection Measure PD02, PD03 and PD08.
- Best Practice Measures RW-BPM-17, RW-BPM-18 and RW-BPM-28.

*Residual Impacts*

10.9.12. No residual impacts.

***Conclusions on Cultural Heritage and the Landscape***

10.9.13. Cultural heritage comprises sites of archaeological, historical or architectural significance within the receiving environment. No impact to Recorded Legally Protected Sites are expected at a result of UWF Related Works and there are no other recorded sites in the study area. For previously unrecorded sites, project design measures include the archaeological monitoring of groundworks. The use of flagmen at site accesses will negate the removal of roadside boundaries, some of which are townland boundaries. Two townland boundaries will be affected by both the UWF Related Works and the UWF Grid Connection; however, the impact is expected to be no greater than slight as only a very small portion of said boundaries will be affected.

10.9.14. 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 to be agreed with the Architectural Heritage Advisory Service of the Department of Culture, Heritage and the Gaeltacht.

- 10.9.15. Landscape is the area perceived by people, both natural and cultural, and the current impact of land use, settlement and other human interventions. Construction phase visual impacts on the landscape will include the creation of compounds, use of machinery, clearing of vegetation and topsoil, stockpiling of materials, reinstatement, etc. Operational phase impacts of the UWF Related Works include the erection of the 18m telecoms relay pole, removal of trees and vegetation and replanting. The Whole UWF Project includes the construction of the new substation and replacement forestry. However, 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. The overall visual impact of the Whole UWF Project from sensitive locations, including designated viewpoints, can be assessed as slight to imperceptible.
- 10.9.16. Subject to the proper implementation of all other relevant mitigation and best practice measures, I would be satisfied that the UWF Related Works would not have any significant effect on cultural heritage and the landscape, either individually or cumulatively with other elements of the Whole UWF Project, or any other projects or activities.

#### **10.10. Vulnerability of the Project to Major Accident and/ or Natural Disaster**

- 10.10.1. 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 and MSD (pharmaceutical) in Kilsheelan, Clonmel are not in proximity to the UWF Related Works site.
- 10.10.2. Land slippage and flooding are natural disasters that could potentially occur. However, there is an absence of peat or very shallow peat at works locations. A Stage II Flood Risk Assessment completed for the UWF Related Works concluded that there is a low risk of flooding. Instream works will be carried out on Class 1 and Class 2 watercourses during periods of dry weather and all permanent crossings will be sized to cope with a minimum 100 year flood event.

10.10.3. 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.

#### 10.11. **Cumulative Impacts & Environmental Interactions**

10.11.1. Chapter 18 of the Revised EIAR sets out the various interactions between the environmental factors insofar as the effect of one environmental factor causes an indirect effect on another environmental factor. Throughout the EIAR, the cumulative assessment of the proposed UWF Related Works is carried out along with the other elements of the Whole UWF Project.

10.11.2. The main potential cross factor effects to population and human health arise from effects to air, material assets and landscape. Increased ambient dust and noise during construction can impact on health, respiratory, cardiovascular, and mental health and effects to material assets (roads) can increase the risk of road traffic accidents. Increased dust and noise can also be caused by an increase in traffic volumes.

10.11.3. 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 a reduction forestry/ grass growth rates.

10.11.4. 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).

10.11.5. 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.

10.11.6. The cumulative effects of the proposed UWF Related Works is assessed together with the other elements of the Whole UWF Project. The other elements of the Whole

UWF Project include the UWF Grid Connection (concurrent application ABP-306204-19); Upperchurch Windfarm (granted under PL22.243040); and UWF Replacement Forestry (afforestation licence approved). UWF Related Works predominately overlays the consented Upperchurch Windfarm. The majority of internal windfarm cabling overlaps consented Upperchurch Windfarm roads and haul route works and the telecom relay pole are located in the immediate vicinity of various parts of the Upperchurch Windfarm. There is also an overlap between UWF Related Works and UWF Grid Connection at Knocknabansha, Knockmaroe and Knockcurraghbola Commons.

- 10.11.7. The Revised EIAR now includes an evaluation of the cumulative effects of UWF Related Works 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 sensitive aspect. Where a new impact pathway was identified during scoping for cumulative receptors, this new impact was also examined in the context of the consented Upperchurch Windfarm.
- 10.11.8. An area of 15km around the footprint of the Whole UWF Project was scoped for other large projects and relevant activities with potential to cause cumulative effects. Larger windfarms were included but windfarms that were too small and too far away were excluded. A number of activities that do not require planning permission (UWF Other Activities) are also included in the EIAR as part cumulative assessment.
- 10.11.9. 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.

10.11.10. 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) that the cumulative assessment cannot rely on surveys and analysis from the consented windfarm. As noted above, Tipperary County Council issued a further information request to the applicant to consider the impacts of time since the collation and assessment for the EIS and EIA accompanying the 2013 application.

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.

10.11.11. The applicant has considered the impact of the UWF Related Works 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 Related Works and the Whole UWF Project.

## 10.12. Reasoned Conclusion

10.12.1. Having regard to the examination of environmental information contained above, and in particular to the EIAR and supplementary information provided by the applicant, and the submissions from 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** on the local economy from increased spending and jobs during the construction period and from payments to local landowners and from sourcing of stone and concrete.

Visitors to the area will be exposed to changes in the environment on a temporary basis during construction works. There will be no significant impacts due to the distance from construction works to waymarked trails, the short duration of construction works and the non-intrusive nature of noise from turbines.

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 grid connection or Upperchurch Windfarm works.

- Potential for adverse effects on **Biodiversity** from slight to moderate magnitude arising from UWF Related Works and cumulatively with the Whole UWF Project with respect to aquatic habitats and species, Hen Harrier, general birds, non-volant animals and marsh fritillary.

Adverse impacts to aquatic habitat and species may occur due to a decrease in surface water quality, instream works at some watercourse crossings and species disturbance/ displacement from additional sedimentation or contamination. There is also the potential for adverse impacts through changes to flow regime. This will be mitigated through implementation of sensitive crossing designs in consultation with IFI. There will also be specific measures for reinstatement works including site-specific bank stabilisation, reinstatement of bank slope and character, creation of compound channels, and reinstatement of instream flow features.

Slight adverse impacts to Hen Harrier are expected from temporary or permanent reduction or loss of foraging habitat and disturbance/ displacement of foraging Hen Harrier (ex situ). As the majority of grid connection works will take place along the public road, disturbance or displacement effects of the Whole UWF Project will be no greater than for UWF Related Works. Mitigation measures for Hen Harrier include the prevention of construction works during Hen Harrier breeding season and during the roosting season (Oct - Feb) construction works within 1km of a roost will be limited to the period between one hour after sunrise to one hour before sunset. Monitoring of nesting and roosting Hen Harrier will take place within 2km and 1km of the construction works boundary respectively.

There will be cumulatively slight impacts to Golden Plover and Meadow Pipit in relation to habitat loss. However, all works will be outside the Irish breeding range for Golden Plover and Meadow Pipit will benefit from enhancement measures for Hen Harrier. Hedgerow removal will take place outside the bird breeding season.

Moderate but temporary disturbance/ displacement effects to other mammals (Irish Hare, Pine Marten, Red Squirrel and Fallow Deer). Not significant to moderate adverse cumulative effects to badger and other mammals and not significant to slight adverse for Otter. Project Design Environmental Measures are proposed for otter and badger include relating to confirmation surveys and proximity of construction works.

Slight adverse impacts to Marsh Fritillary due to habitat loss arising from UWF Related Works and cumulatively with Upperchurch Windfarm works. Pre-construction surveys will be carried out for Devil's-bit Scabious (larval food plant of Marsh Fritillary) and this habitat will be strimmed/ cut in the last available late April/ early May prior to commencement of construction.

Cumulative impact to bats will be imperceptible to not significant. Project Design Environmental Measures that will reduce any impact on bats include the carrying out of construction works during daylight hours, cowlings of lighting, confirmatory surveys, usage of bat boxes and installation of bat crossing structures at severed hedges.

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.

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 for slight to moderate adverse impact to **Soils** from excavation/ relocation and imperceptible or slight impacts in relation to erosion, compaction and contamination effects will be mitigated by Project Design Environmental Measures including the prohibition of land reinstatement during very wet weather;



no batching of wet cement on site; immediate grading and seeding of permanent overburden storage berms after emplacement; and refuelling of vehicles away from watercourses.

- Potential adverse impacts to local surface **Water** bodies could occur from morphological impacts to watercourses due to instream works, and from surface water quality impacts during conifer plantation, earthworks and dewatering of excavations resulting in contamination, increased flood risk and run-off. These will be mitigated by a suite of 18 environmental protection measures and 11 Best Practice Measures have been integrated into the project design to avoid or reduced any significant effect to the water environment. In addition, most of the watercourses to be crossed are minor and works are distributed within several water bodies over a large geographical area.
- 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 boundaries and road pavements. There is also the potential for impacts to road users from increased journey times arising from construction works and construction deliveries to the site. Cumulatively, the impact will be of an imperceptible to slight magnitude. Impacts will be mitigated through implementation of a traffic management plan and Project Design Environmental Protection Measure relating to the timing of construction works.
- 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 of 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, which 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.

10.12.2. 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.

11.2.1. The proposed development comprising works (internal windfarm cabling, realigned windfarm roads, haul route works, a telecom relay pole and ancillary UWF related works), which will facilitate the construction and operation of the already permitted Upperchurch Windfarm to the west of Upperchurch, Co. Tipperary is not directly connected with or necessary to the management of any European site, and is therefore subject to the provisions of Article 6(3).

11.3. **Geographical Scope and Main Characteristics**

11.3.1. The subject site is located in an upland area in the eastern foothills of the Slieve Felim and Silvermines mountains. The site of the proposed UWF Related Works for

the most part follows the boundary of the consented Upperchurch Windfarm which comprises 22 no. wind turbines located around five hills with similar heights ranging between 364m and 411m OD. There are a number of local roads and watercourses located between hills in the vicinity of the site. The main land uses in the area are hill farming and forestry. There are also sporadic dwellings and farm buildings. The nearest built up areas are at Upperchurch and Kilcommon villages, which are approximately 2km to east and west of the site respectively.

- 11.3.2. To the south-west, the application site boundary enters the Slievefelim and Slivermines Mountains SPA. However, no works falling under the UWF Related Works application are proposed within the SPA at this location. UWF Related Works (T16) are approximately 5km west of the Clodiagh River, 2.9km east of the Owenbeg River (T6) and 3km north-east of the Multeen River (site entrance works), at points where these rivers enter the Lower River Suir SAC. The nearest point to the Lower River Shannon SAC is between the haul route works to the south-west and the Inch (Bilboa) River at Cummer Bridge, a distance of approximately 1.5km. The proposed realigned windfarm road to the west of the site is located approximately 3km east of the Bilboa River, which is also within the Lower River Shannon SAC. There are also a number of watercourses within the immediate vicinity of the UWF Related Works.
- 11.3.3. Overall, the UWF Related Works site lies on the boundary of the Shannon and Suir river basins. The majority of the site is within the Clodiagh River Catchment (Suir) and a smaller amount to the south is within the Multeen River Catchment (Suir). Small sections to the west are within the Mulkear River Catchment (Shannon). In terms of local surface water bodies, the Bilboa River catchment is to the west, the Clodiagh River (Local) is to the north, the Owenbeg is east and the Turraheen River is to the south. The UWF Grid Connection commences within the Clodiagh local surface waterbody catchment before passing through the Bilboa River, Clare (Annagh) River, Small River and Newport (Mulkear) River local surface waterbody catchments.
- 11.3.4. The main characteristics of the proposed UWF Related Works are the laying of 17.9km of internal windfarm cabling (approx. 62% located under consented or realigned windfarm roads); haul route works at 13 locations; an 18m high telecom relay pole; realignment of 3 no. windfarm roads; change of use of an existing 'agricultural' entrance to 'agricultural and forestry' entrance; and ancillary works

including 14 temporary site entrances; 5300m of temporary access road; temporary and permanent watercourse crossings, involving 24 small field drains and eight streams; drainage systems around permanent features and temporary drainage around works areas; 0.3 hectares of forestry to be felled; temporary and permanent hedgerow/ tree removal; temporary and permanent fencing; bat crossing structures; temporary storage or permanent placement in berms of 11,830 m<sup>3</sup> of excavated material; and reinstatement of roadside boundaries and public road surfaces.

#### 11.4. Screening the need for Appropriate Assessment

11.4.1. The first test of Article 6(3) is to establish if the proposed development could result in likely significant effects to a European site. This is considered stage 1 of the appropriate assessment process i.e. *screening*. The screening stage is intended to be a preliminary examination. If the possibility of significant effects cannot be excluded on the basis of objective information, without extensive investigation or the application of mitigation, a plan or project should be considered to have a likely significant effect and Appropriate Assessment carried out.

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

11.4.3. European sites considered for Stage 1 screening:

European site (SAC/SPA)	Site code	Distance to UWF Related Works	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Slievefelim to Silvermines Mountains SPA	004165	0 km	Numerous connections	Y
Lower River Shannon SAC	002165	1.5 km	Numerous connections	Y

European site (SAC/SPA)	Site code	Distance to UWF Related Works	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Lower River Suir SAC	002137	3 km	Numerous connections	Y
Anglesey Road SAC	002125	2.9 km	No pathway	N
Bolingbrook Hill SAC	002124	7.2 km	No pathway	N
Keeper Hill SAC	001197	10.9 km	No pathway	N
Silvermines Mountain SAC	000939	11.5 km	No pathway	N
Silvermines Mountain West SAC	002258	12.5 km	No pathway	N
Philipstown Marsh SAC	001847	13 km	No pathway	N
Kilduff, Devilsbit Mountain SAC	000934	13.7 km	No pathway	N
Clare Glen SAC	000930	17 km	No pathway	N
Glenstal Wood SAC	001432	17.1 km	No pathway	N
Slieve Bernagh Bog SAC	002312	28.4 km	No pathway	N
Lough Derg, North-east Shore SAC	002241	28.5 km	No pathway	N
Glenomra Wood SAC	001013	31.4 km	No pathway	N
Tory Hill SAC	000439	40.4 km	No pathway	N
Ratty River Cave SAC	002316	44.5 km	No pathway	N
Askeaton Fen Complex SAC	002279	48.2 km	No pathway	N
Barrigone SAC	000432	62 km	No pathway	N
Curraghchase Woods SAC	000174	50.6 km	No pathway	N
Lough Derg (Shannon) SPA	004058	24.5 km	No pathway	N
River Shannon and River Fergus Estuaries SPA	004077	34.5 km	No pathway	N
Stack's to Mullaghareirk Mountains, West Limerick Hills & Mount Eagle SPA	004161	67.3 km	No pathway	N

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

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

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

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

Site name	Is there a possibility of significant effects in view of the conservation objectives of the site?		
Qualifying Interest feature	General impact categories presented		
	Habitat loss/ modification	Water quality and water dependent habitats (pollution)	Disturbance/ displacement barrier effects
<p>Slieve Felim to Silvermines Mountains SPA</p> <p>Special Conservation Interest:</p> <p>Hen Harrier</p>	<p>Yes</p> <p>Permanent or temporary reduction or loss of ex situ suitable foraging habitat.</p>	<p>No</p>	<p>Yes</p> <p>Disturbance/ displacement of foraging Hen Harrier (ex-situ during breeding season)</p>
<p>Lower River Shannon SAC</p> <p>Qualifying Interests:</p> <p>Sandbanks which are slightly covered by sea water all the time [1110]</p> <p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Coastal lagoons [1150]</p> <p>Large shallow inlets and bays [1160]</p> <p>Reefs [1170]</p> <p>Perennial vegetation of stony banks [1220]</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p>	<p>Yes</p> <p>Riparian habitat degradation and decrease in habitat quality.</p>	<p>Yes</p> <p>Potential impacts on water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachium vegetation</p> <p>Potential for changes in flow, decrease in habitat quality via: surface water runoff, sediment entrainment or release; release of fuels/ oils/ chemicals, surface/ ground water quality impacts</p>	<p>Yes</p> <p>There is hydrological connectivity to the Lower River Shannon via the Bilboa River – potential impacts on Sea Lamprey, Brook Lamprey, River Lamprey and Salmon.</p> <p>Potential for disturbance to Otter.</p>

<p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330]</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]</p> <p>Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]</p> <p>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0]</p> <p><i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]</p> <p><i>Petromyzon marinus</i> (Sea Lamprey) [1095]</p> <p><i>Lampetra planeri</i> (Brook Lamprey) [1096]</p> <p><i>Lampetra fluviatilis</i> (River Lamprey) [1099]</p> <p><i>Salmo salar</i> (Salmon) [1106]</p> <p><i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]</p> <p><i>Lutra lutra</i> (Otter) [1355]</p>			
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<p>Lower River Suir SAC</p> <p>Qualifying Interests:</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330]</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]</p> <p>Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]</p> <p>Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]</p> <p>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0]</p> <p><i>Taxus baccata</i> woods of the British Isles [91J0]</p> <p><i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]</p> <p><i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092]</p> <p><i>Petromyzon marinus</i> (Sea Lamprey) [1095]</p> <p><i>Lampetra planeri</i> (Brook Lamprey) [1096]</p>	<p>Yes</p> <p>Riparian habitat degradation and decrease in habitat quality.</p>	<p>Yes</p> <p>Potential impacts on the following:</p> <p>Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]</p> <p>Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]</p> <p>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0]</p> <p><i>Taxus baccata</i> woods of the British Isles [91J0]</p> <p>Potential for changes in flow regime and decrease in habitat quality.</p>	<p>Yes</p> <p>Water run-off flow paths potentially affecting Freshwater Pearl Mussel, White-Clawed Crayfish, Sea Lamprey, Brook Lamprey, River Lamprey and Salmon. Potential for disturbance to Otter.</p>
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Lampetra fluviatilis (River Lamprey) [1099]			
Alosa fallax fallax (Twaite Shad) [1103]			
Salmo salar (Salmon) [1106]			
Lutra lutra (Otter) [1355]			

**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)**

- 11.4.6. The remaining sites can be screened out from further assessment because of the scale of the proposed works, the nature of the Conservation Objectives, Qualifying and Special Conservation Interests, the separation distances and the lack of a substantive ecological linkage between the proposed works and the European sites.
- 11.4.7. There is no potential for the proposed UWF Related Works 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. Within the Ratty River Cave SAC and the Curraghchase Woods SAC, there is no potential disturbance or displacement effects to Lesser Horseshoe Bat due to the separation distance between the SACs in question and the UWF Related Works site. Similarly, the separation distance between the works site and the Barrigone SAC will result in no significant effects on Marsh Fritillary.
- 11.4.8. With respect to the SPAs in the study area, there will be no direct habitat loss, habitat degradation or disturbance effect on any site including the Slievefelim to Silvermines Mountains SPA. The UWF Related Works site boundary overlaps the Slieve Felim to Silvermines Mountains SPA; however, no works, groundworks and vegetation clearance will take place within the SPA. The UWF Related Works are 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.
- 11.4.9. It is therefore reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on Anglesey Road SAC (002125),

Bolingbrook Hill SAC (002124), Keeper Hill SAC (001197), Silvermines Mountains SAC (000939), Silvermines Mountains West SAC (002258), Philipstown Marsh SAC (001847), Kilduff, Devilsbit Mountain SAC (000934), Clare Glen SAC (000930), 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 Revised Appropriate Assessment Report accompanying the planning appeal. I am therefore satisfied that no additional sites other than those assessed in the NIS and Revised Appropriate Assessment Report (Lower River SAC, Lower River Suir SAC and Slieve Felim and Silvermines Mountains SPA) need to be brought forward for Appropriate Assessment.

## 11.5. The Natura Impact Statement and Associated Documents

11.5.1. The application was accompanied by a NIS for the Whole UWF Project (Elements 1 to 5) submitted to the Planning Authority on 17<sup>th</sup> July 2018 and dated May 2018 (Volume E). This document is made up of the following:

- Natura Impact Statement for Whole UWF Project (three elements – UWF Grid Connection, UWF Related Works and UWF Replacement Forestry)
- Appendix A1: European Site Synopsis
- Appendix A2: European Site Conservation Objectives
- Appendix A3: Finding of No Significant Effects (FONSE) Report
- Appendix A4: Project Information – Description of UWF Grid Connection
- Appendix A5: Project Information – Description of UWF Related Works
- Appendix A6: Project Information – Description of UWF Replacement Forestry

- Appendix A7: Project Information – Description of consented UWF
- Appendix A8: Description of UWF Other Activities
- Appendix A9: Environmental Management Plan for UWF Grid Connection
- Appendix A10: Environmental Management Plan for UWF Related Works
- Appendix A11: Biodiversity Information: EIAR for UWF Grid Connection Ch. 8 Biodiversity
- Appendix A12: Biodiversity Information: EIAR for UWF Related Works Ch. 8 Biodiversity
- Appendix A13: Biodiversity Information: EIAR for UWF Replacement Forestry Ch. 8 Biodiversity
- Appendix A14: Biodiversity Information – EIAR Appendix 8.1: Detailed Biodiversity Data and Supplementary Information
- Appendix A15: Biodiversity Information – EIAR Appendix 8.1.7: Confidential Annex (Bats)
- Appendix A16: Supporting 2013/ 2014 Planning Documentation for UWF

11.5.2. The Planning Authority requested further information from the applicant on 10<sup>th</sup> September 2018, noting that the NIS has excluded through the process of screening, both the UWF Replacement Forestry and the Upperchurch Windfarm itself from the Stage 2 Appropriate Assessment and this does not subsequently allow for cumulative impacts of these projects to be adequately assessed.

11.5.3. The applicant lodged a response to the further information request on 9<sup>th</sup> November 2018 wherein it is submitted that adequate information has been provided to facilitate the competent authority to carry out Appropriate Assessment, including an assessment of in-combination effects in relation to the UWF Related Works project. It is noted that the Stage 2 Appropriate Assessment Report (NIS) provides an evaluation of individual and in-combination effects to include all five elements of the Whole UWF Project, together with Castlewaller Windfarm, Bunkimalta Windfarm, and forestry, agricultural and turbury activities.

11.5.4. Notwithstanding this, the first reason for refusal attached to Tipperary County Council's notification of decision states that the applicant has failed to demonstrate

that the development on the site would not have an adverse impact on the site integrity of the nearby Slievefelim to Silvermines SPA having regard to the level of recent survey information lodged with the application in relation to the baseline ecological conditions of the Hen Harrier on lands contiguous to the SPA. It is considered on this basis that it cannot be ruled out, beyond all reasonable scientific doubt, that the proposed development would not lead to a reduction or loss of suitable foraging habitat of the Hen Harrier. In response to this reason for refusal, the applicant has submitted a revised volume of Appropriate Assessment Reporting with the appeal submission dated February 2019. This includes a Stage 1 Screening Report and a Stage 2 Appropriate Assessment (NIS). It should be noted that the Stage 2: Appropriate Assessment should be entitled an NIS as required under the Planning and Development Act, 2000 (as amended). However, the document in question is a NIS in all but name.

- 11.5.5. In general, I am satisfied that NIS submitted with the planning application for the Whole UWF Project Elements 1 to 5, the response to the Council's further information request and the revised Appropriate Assessment Reporting (including NIS) for UWF Related Works adequately describe 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.
- 11.5.6. The Appropriate Assessment Reporting (Screening and NIS) were informed by the following studies, surveys and consultations:
- Review of conservation objectives, site synopsis and site boundary information for European Sites 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).

- Review of location and layout mapping and description of UWF Related Works project, including construction and methodologies;
- Supporting ecological receptor information in Biodiversity Chapter 8 of the UWF Related Works Revised EIAR (Jan. 2019);
- Information on the Environmental Protection Project Design Measures and Best Practice Survey Methods used to inform the Biodiversity evaluation (Stage 2);
- Environmental Management Plans for UWF Related Works;
- Site visits and field works surveys for the UWF Related Works;
- Supporting survey information for the Upperchurch Windfarm (2012 to 2017) and from previous (since refused) UWF Grid Connection (2016/ 2017);
- Consultations with statutory consultees and other relevant bodies between August 2015 and January 2019 as follows:
  - Scoping document to NPWS, Inland Fisheries Ireland, Bird Watch Ireland and Bat Conservation Ireland (06/06/17);
  - Consultation with NPWS on watercourse crossings, biosecurity, Marsh Fritillary, forestry felling and replanting and mitigation for bats and Hen Harrier (27/7/17);
  - Correspondence with IFI regarding watercourse evaluations in terms of fisheries importance and proposed crossing methods (23/8/17).
  - Meeting with NPWS to discuss each receptor within the project study area (27/8/17);
  - Final meeting with NPWS to give full project overview (13/12/17).
- Ecological baseline surveys including the following:
  - Ornithological surveys performed from March 2015 to April 2017 at five vantage points. Records of Hen Harrier usage dating back to 2003 collated to establish suitable nesting and roosting habitat and further consultation undertaken in January 2019 with local Hen Harrier experts and NPWS.

- Review of existing habitat information and further walkover of UWF Related Works in July 2017. All habitat surveys followed best practice guidance (Smith et al., 2011) and classified (Fossett, 2000).
- Survey of watercourse crossings pertaining to UWF Related Works on July 2017 – no watercourse crossings for the UWF Related Forestry and confirmation surveys of watercourses associated with Upperchurch Windfarm undertaken on 19<sup>th</sup> and 13<sup>th</sup> September 2017.
- Otter surveys following NRA Guidelines for the Treatment of Otters During Construction of National Road Schemes (NRA,2006).

11.5.7. The NIS concluded that, subject to implementation of mitigation measures, neither the UWF Related Works, 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.

11.5.8. 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).

#### 11.6. **Appropriate Assessment of implications of the proposed development on each European Site**

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

11.6.2. I have relied on the following guidance:



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

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

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

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

11.6.5. **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 and Lower River Suir SAC.
- Spread of aquatic invasive species

11.6.6. **Tables 3-6** summarise the appropriate assessment and site integrity test. The conservation objectives, targets and attributes as relevant to the identified potential significant effects are examined and assessed in relation to the aspects of the 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.

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

11.6.8. Key issue raised by the National Parks and Wildlife Service is the extent to which the Hen Harriers breeding within the SPA are dependent upon any suitable hunting habitat within the site of the proposed windfarm.

**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 (ex-situ during breeding season)

Conservation Objectives: [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO004165.pdf](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 - there is, and will probably continue to be, a sufficiently large habitat to maintain its	- Permanent or temporary reduction or loss of suitable foraging habitat. - Disturbance/ displacement of foraging Hen Harrier (ex-situ during the breeding season). - Impacts on land cover from permanent structures, forestry felling and realignment of consented roads – may result in foraging habitat being temporarily unavailable and may affect breeding success. - Temporary impacts from trenching,	- Carrying out of construction work and hedgerow removal outside of the breeding season. - Hen Harrier breeding surveys to record all pre-nuptial activity, nesting activity and active nests within 2km of construction works boundary prior to commencement, during and 3 years after construction. - Construction works within 1km of Hen Harrier roost limited to one hour after sunrise	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. - Habitat loss through forestry maturation - Landcover change.	Yes - Permanent habitat loss represents 0.28% of suitable foraging habitat within 50m of UWF Related Works and is considered negligible. - no construction works and no land use change will take place within SPA boundary. - No nests occur within 2km of UWF Related Works and foraging usage in the vicinity is evaluated as low in line with trends established in 2013 EIS. - Available foraging habitat within 50m of UWF Related Works is sub-optimal due to distance to nearest nest, the managed nature of much of

	<p>populations on a long-term basis.</p>	<p>hedgerow removal, widening of entrances and access roads for transport of materials.  - Total permanent land take of suitable foraging habitat (0.48 Ha) is confined to agricultural grassland (0.12 Ha); wet grassland (0.07 Ha); upland blanket bog/ conifer mosaic (0.1 Ha); mature or closed canopy conifer plantation (0.28 Ha) and scrub (0.004 Ha).</p>	<p>and one hour before sunset (Oct. to Feb.).  - No UWF Grid Connection works will be carried out within 2km of an active Hen Harrier nest - distance to nearest confirmed nest locations is 4.8km &amp; 4.5km respectively for UWF Related Works and 3.15km for the closest point of the UWF Grid Connection</p>	<ul style="list-style-type: none"> <li>- Multiple sources of noise and visual intrusion.</li> <li>- Foraging birds may encounter sources of disturbance within or ex-situ to SPA.</li> <li>- Separation distance from zone of overlap between UWF Related Works, UWF Grid Connection and consented Upperchurch Windfarm from Castlewaller Windfarm (&gt;10km) or Bunkimalta Windfarm (&gt;8km) precludes foraging overlap and sequential effects.</li> </ul>	<p>the surrounding landscape, and the fragmented nature of available foraging patches.</p> <ul style="list-style-type: none"> <li>- Randomness and low number of Hen Harrier observations suggest that windfarm is used infrequently.</li> <li>- No potential cumulative impact with UWF Grid Connection because route is entirely on paved roads.</li> <li>- Magnitude of effect on the sensitive Hen Harrier following Percival et al. is evaluated as negligible (0-1% of habitat lost), equivalent to a non-distinguishable change away from baseline conditions.</li> <li>- Negative effects of Upperchurch Windfarm are evaluated in the context of being effectively mitigated by the activities consented under the Upperchurch Hen Harrier Scheme resulting in net gain to Hen Harrier in area and quality of habitat.</li> <li>- Provision and management of UWF Replacement Forestry outside but adjacent to the SPA also contributes to net overall gain to Hen Harrier (30 Ha of actively managed foraging habitat). Forestry is a generally negative trend in the</li> </ul>
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					background environment and this is off-set by gain of 30 ha.
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**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:

- Riparian habitat degradation
- Changes in flow regime
- Decrease in habitat quality via: surface water runoff, sediment entrainment or release; release of fuels/ oils/ chemicals, surface/ ground water quality impacts
- Disturbance to fisheries
- Spread of aquatic invasive species
- Disturbance to otter

Conservation Objectives: [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO002165.pdf](https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf)

		Summary of Appropriate Assessment			
Conservation Objective	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?
To maintain the favourable conservation condition of the following:					
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate	- Impacts on water runoff flow paths, watercourses/ landcover from movement of soil &	- Alteration to flow morphology will be subject to Project Design Measures	- UWF Whole Project – 11 no. watercourses of fisheries value affected.	Yes - Impacts to riparian habitat are temporary to short-terms

Batrachion vegetation [3260]	hydrological and tidal regime; maintain appropriate sub-stratum, water quality, typical species, floodplain connectivity and marginal fringing.	<p>machinery; earthworks, excavations &amp; overburden storage; sediment; in-stream works; new crossing structures; use of fuels, chemicals &amp; cement based compounds; excavation dewatering; and tree felling &amp; brash storage.</p> <p>- Direct impacts to channel morphology and geomorphology due to instream works and sediment deposition.</p>	<p>including reinstatement of watercourses at crossing locations.</p> <p>All construction works carried out in daylight hours</p> <p>No land reinstatement during very wet weather or when soil is waterlogged</p> <p>Restriction of construction traffic to construction works area – no tracking across adjacent ground.</p>	<p>– effect on riparian and bankside habitat with implications for structure and function of habitat services with regard to ecological receptors has been evaluated as slight to moderate adverse.</p> <p>UWF Grid connection – proposed works affecting 13 no. watercourses of fisheries value includes trench excavation, bridge works, culvert replacement and resurfacing - may give rise to disturbance to fish and aquatic biodiversity receptors.</p> <p>- Effects on surface water along UWF Grid Connection route likely to arise from trench excavation within road and at watercourse crossings at existing road bridges and culvert locations</p> <p>- Presence of salmonid habitat within the works area and protected Annex II (and Annex IV listed) species within the</p>	<p>and reversible with reinstatement.</p> <p>- Riparian habitat within Upperchurch Windfarm directly affected by construction works were not identified as being of significant conservation value.</p> <p>- Class 1 and Class 2 watercourses where in-stream works are required are largely small headwater streams that are likely to have low flows from July to Sept.</p>
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 <sup>2</sup> ; no decline in extent and distribution of spawning beds; more than 50% of sample sites positive.	<p>- Instream works required at 25 no. of 32 no. watercourse crossings by internal cabling, realigned windfarm roads and haul route works (5 with fisheries value).</p>	<p>Realigned windfarm roads will have permanent surface water drainage with check dams.</p> <p>Only precast concrete culverts or structures – no batching of wet cement on site.</p>	<p>- Effects on surface water along UWF Grid Connection route likely to arise from trench excavation within road and at watercourse crossings at existing road bridges and culvert locations</p>	<p>Yes</p> <p>- Spatial extent of effects in terms of decrease in habitat quality and displacement of aquatic ecological receptors will occur within the footprint of the instream works or culvert replacement, and also downstream within the zone of sediment transport, and upstream and downstream of all crossings.</p>
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/m <sup>2</sup> ; no decline in extent and distribution of spawning beds; more than 50% of sample sites positive.	<p>- Instream works will require direct excavation of banks and bed of watercourse – potential to degrade quality of baseline habitat which supports the structure, function and diversity of aquatic species</p> <p>- Potential to directly disturb or displace</p>	<p>Instream construction works will be followed by site-specific reinstatement measures to ensure the restoration of flow character and morphology within the affected reach.</p>	<p>- Presence of salmonid habitat within the works area and protected Annex II (and Annex IV listed) species within the</p>	<p>- Impact to works site are temporary – downstream siltation effects are short-term and not reversible.</p> <p>UWF Grid Connection – effect on physical instream habitat due to instream works at potential culvert</p>

		<p>salmonid fish and aquatic species within fish-bearing streams, or sensitive aquatic receptors such as White Clawed Crayfish.</p> <p>- Aquatic invasive species may be introduced to unaffected catchments or spread within infected watercourses during the course of instream works or transported via site machinery.</p> <p>- Significant effects on otter from displacement resulting from noise or visual intrusion may affect the integrity of hydrologically connected European Sites.</p> <p>- No active holts located within 150m of works locations – effects reduced to disturbance/ displacement of foraging or resting animals within aquatic habitats and adjacent riparian corridors.</p>	<p>Phased approach to watercourse crossing works that will only permit one potential sediment producing activity at a time.</p> <p>All excavated material to be stored more than 50m from Class 1 &amp; 2 watercourses and temporary silt control methods placed around all overburden storage areas. Permanent overburden storage berms to be graded and seeded immediately.</p> <p>Double silt fencing, temporary drain blocking, placement of straw bales and use of matting to prevent ground erosion and rutting within 50m of Class 1 &amp; 2 watercourses.</p> <p>No direct discharge of treated water into any watercourse or drain after dewatering – treatment prior to discharge using infiltration trench,</p>	<p>affected catchments downstream.</p> <p>Whole UWF Project – potential for introduction of non-native, invasive aquatic species at 96 no. watercourse crossings.</p> <p>15 no. watercourse crossing locations along UWF Grid Connection route have potential to support otter – evidence of otter found at three of these.</p>	<p>replacement locations has been evaluated as slight to moderate adverse impact on availability, diversity and quality of habitat supporting aquatic species.</p> <p>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.</p> <p>Fish likely to mobilise outside of their territories due to human disturbance but will return once disturbance effect diminishes.</p>
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;				Yes  As above



	juvenile density at least 1/m <sup>2</sup> ; no decline in extent and distribution of spawning beds, more than 50% of sample sites positive		settlement pond or siltbuster, etc.		
Salmo salar (Salmon) [1106]	100% of river channels down to 2 <sup>nd</sup> 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.		No refuelling of vehicles within 100m of watercourse/ wells and chemical wastes will be stored in designated location.  In-stream works to be undertaken during IFI specified period and carried out to best practice (IFI, 2016). In-stream works will not be undertaken without isolation of flow – electrofishing used if required and water will be isolated from works by over-pumping, flume or channel diversion methods.  New permanent culverts sized to cope within min. 100 year flood event – min. 900mm regardless. Bottomless culverts on Class 1 & 2 watercourses.		Yes  As above
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.		Reinstatement works will include site-specific bank stabilisation measures using boulder armour or willow/ brush		Majority of watercourse crossings within cumulative evaluation study area are drains of marginal ecological value, and with the absence of holts within 150m of the works area, cumulative impact is expected to be negligible.

			<p>back protection; reinstatement of bank slope and character; creation of compound channels; and replanting of riparian buffer zones with suitable native species to manage flood flows and buffer run-off.</p> <p>Implementation of Sediment and Erosion Control Plan</p> <p>Confirmatory surveys for active Otter holts and activity to be carried out 150m upstream and downstream of watercourse crossing locations. Any construction within 150m of active holt to take place outside daylight hours including 2 hours after/ before sunrise/ sunset in summer and outside 1 hour after/ before sunrise/ sunset in winter.</p> <p>No works to be undertaken while cubs are present in holt within 150m of watercourse crossing point and no wheeled or tracked</p>		
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			vehicle to be used within 20m and light work within 15m of active (non-breeding) holt. Prohibited working area associated with otter holts to be fenced off where appropriate.		
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**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:

- Riparian habitat degradation
- Changes in flow regime
- Decrease in habitat quality via: surface water runoff, sediment entrainment or release; release of fuels/ oils/ chemicals, surface/ ground water quality impacts
- Disturbance to fisheries
- Spread of aquatic invasive species
- Disturbance to otter

Conservation Objectives: [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO002137.pdf](https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002137.pdf)

		Summary of Appropriate Assessment			
Conservation Objective	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?
To maintain the favourable conservation condition of the following:					
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate hydrological and tidal regime; maintain	- Impacts on water runoff flow paths, watercourses and landcover from movement of soil and machinery; earthworks,	- Alteration to flow morphology will be subject to Project Design Measures including reinstatement	UWF Whole Project effect – Riparian habitat will be affected at 11 no. watercourse crossings with fisheries value.	Yes  Riparian habitat impacts will be reversible with reinstatement and temporary to short term,

<p>Batrachion vegetation [3260]</p>	<p>appropriate sub-stratum, water quality, typical species, floodplain connectivity and marginal fringing.</p>	<p>excavations and overburden storage; sediment; instream works; new crossing structures; use of fuels, chemicals and cement based compounds; excavation dewatering; and tree felling and brush storage.</p> <p>Removal of, or damage to, riparian vegetation during instream works or excavation / ground clearance works in close proximity to watercourse has potential to impact on quality of riparian habitats which in turn can effect watercourse morphology, shading, bank stability and nutrient and sediment loading, with indirect effects on aquatic species.</p>	<p>of watercourses at crossing locations.</p> <p>All construction works carried out in daylight hours</p> <p>No land reinstatement during very wet weather or when soil is waterlogged</p> <p>Restriction of construction traffic to construction works area – no tracking across adjacent ground.</p> <p>Realigned windfarm roads will have permanent surface water drainage with check dams.</p> <p>Only precast concrete culverts or structures – no batching of wet cement on site.</p>	<p>Whole UWF Project – potential decrease in aquatic habitat (via changes to flow regime) at 10 no. watercourse crossings with fisheries value (5 no. for UWF Grid Connection and 5 no. for UWF Related Works).</p> <p>UWF Whole Project – 8 no. instream works locations where crossing of fish bearing streams are required, all of which will be sensitive to disturbance.</p> <p>UWF Whole Project Effect – potential for introduction of non-native, invasive aquatic species at 96 no. watercourse crossings.</p>	<p>limited to construction phase and early operational stage until vegetation has re-established.</p> <p>Change to flow regime will be brief to temporary at potential culvert replacement works locations and restricted to the footprint of, and directly adjacent to, the existing crossing point.</p>
<p>Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]</p>	<p>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.</p>	<p>Direct impacts identified to channel morphology and geomorphology due to instream works and sediment deposition.</p> <p>Any change in watercourse</p>	<p>Instream construction works will be followed by site-specific reinstatement measures to ensure the restoration of flow character and morphology within the affected reach.</p>	<p>Whole UWF Project – Construction works will occur across a c. 30km wide area within River Shannon and River Suir catchments – potential to cause disturbance or displacement of otter at larger watercourse crossings occurring</p>	<p>Yes - as above</p>
<p>Austropotamobius pallipes (White-clawed Crayfish) [1092]</p>	<p>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.</p>	<p>Any change in watercourse</p>	<p>Instream construction works will be followed by site-specific reinstatement measures to ensure the restoration of flow character and morphology within the affected reach.</p>	<p>Whole UWF Project – Construction works will occur across a c. 30km wide area within River Shannon and River Suir catchments – potential to cause disturbance or displacement of otter at larger watercourse crossings occurring</p>	<p>Yes - above Spatial extent of decrease in aquatic habitat will occur within footprint of instream works and will be dispersed between two regional catchments.</p>

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.	<p>morphology which affects channel flow regimes can result in cross factor effects on aquatic ecological communities likely to be present in fisheries value watercourses.</p> <p>Riparian habitat affected at 6 no. watercourse crossings identified as having fisheries value</p> <p>Additional sediment contributions entering the watercourse from construction works can have negative implications for fish and invertebrates due to physical damage and reduced feeding/ foraging, compaction of spawning gravels and mortality for salmonid eggs and invertebrate life stages within gravel substrates.</p>	<p>Phased approach to watercourse crossing works that will only permit one potential sediment producing activity at a time.</p> <p>All excavated material to be stored more than 50m from Class 1 &amp; 2 watercourses and temporary silt control methods placed around all overburden storage areas. Permanent overburden storage berms to be graded and seeded immediately.</p>	along the UWF Grid Connection.	<p>Yes - above 75% of watercourses within UWF Related Works area are drains or marginal watercourses – impact magnitude is expected to be negligible.</p> <p>No likelihood of additive cumulative effects to individual otters from both the UWF Grid Connection, UWF Related Works and Upperchurch Windfarm works.</p>
To restore the favourable conservation condition of the following:		<p>Double silt fencing, temporary drain blocking, placement of straw bales and use of matting to prevent ground erosion and rutting within 50m of Class 1 &amp; 2 watercourses.</p>			
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; maintain appropriate hydrological regime; criteria relating to dead wood, veteran trees and local	<p>Potential to disturb or displace salmonid fish and aquatic species or sensitive aquatic receptors such as white clawed crayfish.</p>	<p>No direct discharge of treated water into any watercourse or drain after dewatering – treatment prior to discharge using infiltration trench,</p>		Yes - above

	distinctiveness; and a variety of vegetation composition and absence/ control of negative indicator species.	Potential for introduction of non-native, invasive aquatic species at all 32 no. watercourse crossings associated with UWF Related Works.	settlement pond or siltbuster, etc.  No refuelling of vehicles within 100m of watercourse/ wells and chemical wastes will be stored in designated location.		
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion <i>incanae</i> , <i>Salicion albae</i> ) [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; criteria relating to dead wood, veteran trees and local distinctiveness; and a variety of vegetation composition and absence/ control of negative indicator species.	Watercourses are present which form part of or are hydrologically connected to European Sites which include otter as a qualifying interest. Noise and visual intrusion impacts through air and visibility pathways	In-stream works to be undertaken during IFI specified period and carried out to best practice (IFI, 2016). In-stream works will not be undertaken without isolation of flow – electrofishing used if required and water will be isolated from works by over-pumping, flume or channel diversion methods.		Yes - above
<i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029]	Restore distribution to 10.4km and population to at least 10,000 adult mussels; restore 20% of population to $\leq 65$ mm in length and at least 5% to $\leq 30$ mm in length; $\leq 5\%$ decline from previous no. of adults counted; dead shells $< 1\%$ of adult population and scattered in distribution; restore		New permanent culverts sized to cope within min. 100 year flood event – min. 900mm regardless. Bottomless culverts on Class 1 & 2 watercourses.  Reinstatement works will include site-specific bank stabilisation measures using boulder armour or willow/ brush		Yes - above  Nearest Freshwater Pearl Mussel population is located c. 17km downstream from the UWF Related Works and conservation objectives focus on Clodaigh (Portlaw) population and there is no hydrological connectivity.

	<p>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.</p>		<p>back protection; reinstatement of bank slope and character; creation of compound channels; and replanting of riparian buffer zones with suitable native species to manage flood flows and buffer run-off.</p> <p>Implementation of Sediment and Erosion Control Plan</p> <p>Confirmatory surveys for active Otter holts and activity to be carried out 150m upstream and downstream of watercourse crossing locations. Any construction within 150m of active holt to take place outside daylight hours including 2 hours after/ before sunrise/ sunset in summer and outside 1 hour after/ before sunrise/ sunset in winter.</p> <p>No works to be undertaken while cubs are present in holt within 150m of watercourse crossing point and no</p>		
<p>- <i>Petromyzon marinus</i> (Sea Lamprey) [1095]</p> <p>- <i>Lampetra planeri</i> (Brook Lamprey) [1096]</p> <p>- <i>Lampetra fluviatilis</i> (River Lamprey) [1099]</p>	<p>Greater than 75% of main stem length of rivers accessible from estuary (Sea Lamprey), access to all watercourses down to 1<sup>st</sup> order streams (Brook and River Lamprey) at least 3 age/ size groups present, juvenile density at least 1/m<sup>2</sup> (Sea Lamprey) and 2/m<sup>2</sup> (Brook and River Lamprey), no decline in extent and distribution of spawning beds, more than 50% of sample sites positive</p>				<p>Yes - above</p> <p>Duration of any disturbance impacts are considered with regard to fish species will be temporary and reversible.</p>



Salmo salar (Salmon) [1106]	100% of river channels down to 2 <sup>nd</sup> 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.		wheeled or tracked vehicle to be used within 20m and light work within 15m of active (non-breeding) holt.  Prohibited working area associated with otter holts to be fenced off where appropriate.		Yes - above  Duration of any disturbance impacts are considered with regard to fish species will be temporary and reversible.
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**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.

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

- 11.6.9. According to the Site Synopsis, the Slieve Felim to Silvermines Mountains SPA is an extensive upland site located in Counties Tipperary and Limerick, much of which is over 200m above sea level, with the highest peak at Keeper Hill (694m). Roughly half of the site is afforested with coniferous forests in first and second rotation plantations (pre-thicket and post-thicket), and substantial areas of clear fell. Approximately one quarter of the site comprises unplanted blanket bog and heath, with the remainder consisting of mostly of rough grassland used for hill farming. There is also some deciduous woodland occurring in river valleys.
- 11.6.10. 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*

- 11.6.11. 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. Condition 18 requires the full implementation of the Ecological Management Plan submitted with the planning application, including the provision of enhanced foraging areas, additional hedgerow enclosures, and measures by landowners in relation to spreading, burning, interference with drainage, retention of hedgerow, restriction on use of poisons and new forestry plantation. It is highlighted in the Inspector's Report

for this case that the development site is not within the SPA and surveys of the site have indicated that no nesting of the species occurs within the site. Mitigation measures include the provision of alternative foraging areas to replace potential/ possible foraging areas displaced as a result of the siting of turbines on site.

*Mitigation/ compensation*

- 11.6.12. Observers on the current planning application and appeal submit that the development requires compensatory measures to be adopted and therefore Appropriate Assessment cannot be carried out under Article 6.3. It is stated that the proposal to set aside land to compensate for habitat loss is not allowed since the nearby Keeper Hill case. Under the Keeper Hill, (Case C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála), the question was referred to the Court of Justice of the European Union 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 in question adversely affects the integrity of the SPA, or whether they are in fact compensatory and therefore relevant under Article 6(4).
- 11.6.13. Upperchurch Hen Harrier Scheme was prepared to comply with Condition 18 of PL22.243040 to enhance and protect foraging habitat for Hen Harrier on agricultural grassland in the vicinity of the SPA and Upperchurch Windfarm at Knockcurraghbola Commons, Coumnageeha, Foilnaman, Knockmaroe and Grousehall townlands. A total of 2.2ha of trees, 1.4km of riparian habitat and 2.8km of new hedgerow will be enhanced or created during initial activities over an area of 128 hectares of agricultural lands that will be managed for the benefit of Hen Harrier, thereby protecting foraging habitat in the vicinity of the Slievefelim to Silvermines SPA.
- 11.6.14. The loss of Hen Harrier foraging habitat arising from the proposed Upperchurch Windfarm development was estimated within the parent application to be 95 hectares and this has been extrapolated to 98.11 hectares to include the current UWF Related Works application. A total area of 0.48 hectare of suitable foraging habitat will also be lost within 50m of UWF Related Works. This represents 0.28% of the total suitable foraging habitat within 50m of the UWF Related Works and is considered negligible. UWF Replacement Forestry (6 hectares) is proposed at Foilnaman as a replanting obligation arising from the felling of forestry for the Whole

Upperchurch Windfarm Project. This will also contribute to the net gain specifically for Hen Harrier.

- 11.6.15. It is contended in the NIS that the net gain to Hen Harrier is 30 hectares, (128 ha – 98.11 ha). Essentially, the loss of suitable habitat arising from the proposed development is off-set or compensated by the creation via a management plan of improved or new foraging habitat at a different, albeit nearby or adjoining location. It is noteworthy that a suitable habitat for Hen Harrier, i.e. open canopy forestry, changes over time as the forestry matures.
- 11.6.16. It was concluded in Case C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála (28<sup>th</sup> July 2018) that the management plan proposed at Keeper Hill with suitable habitat areas varying geographically over time would be a compensatory measure which should not be taken into account as part of the Appropriate Assessment carried out in accordance with Article 6(3). In this regard, it was not considered possible for the benefits of a management plan providing for new habitat aimed at compensating for the loss of habitat due to the proposed development to be foreseen with the requisite degree of certainty at the time when the authority approved the contested development.
- 11.6.17. Notwithstanding this, the proposed Upperchurch Windfarm development fundamentally differs in the sense that no loss of foraging habitat will occur within European Sites and the proposed works, together with mitigation measures implemented through the Hen Harrier Management Scheme and UWF Replacement Forestry, are all located entirely outside of the SPA. As was ruled in Case C-521/12, TC Briels and others v Minister van Infrastructuur en Milieu, a plan or project which has negative implications for the type of natural habitat of a *European Site* and which provides for the creation of an area of equal or greater size of the same natural habitat type within the same *site*, has an effect on the integrity of that site, and can be categorised as compensatory measures. Furthermore, it was noted by the Inspector reporting on the parent case when carrying out the Appropriate Assessment in 2014 that “...*irrespective of whether these alternative foraging areas offered by way of mitigation, are or are not provided, I am satisfied that no adverse effects arise from the development in relation to the Natura Site and any qualifying interests or objectives.*”

11.6.18. Having regard to the above, I am satisfied that provision of mitigatory habitat through the Hen Harrier Management Scheme outside but adjacent the SPA is not comparable to the Keeper Hill case where a management plan would have provided habitat within the SPA. I note also that Observers James & Tanya Embleton commented that UWF Replacement Forestry is effectively lost to Hen Harrier once the canopy closes. However, it should be noted that UWF Replacement Forestry is proposed as a replanting obligation for forestry to be felled as part of the windfarm works. The UWF Replacement Forestry will nonetheless contain ride lines and will benefit Hen Harrier as the forestry matures. Notwithstanding this, mitigatory habitat is sufficiently provided for through the Hen Harrier Management Scheme.

*Previous Grid Connection Application*

11.6.19. The Board refused permission for a 110kV substation and underground electric cabling (ABP-301959-18) connecting to the consented windfarm and associated substation (PL22.243040). The grid connection was to continue mostly off road through the SPA on lands to the north of the concurrently proposed grid connection (ABP-306204-19). 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.

11.6.20. This proposal would have given rise to the loss of 3.14 hectares of suitable foraging habitat and 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.

11.6.21. 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 of alternative grid connection technologies such as overhead line alternatives. The concurrent proposal now sees the proposed grid connection situated almost entirely underground along the alignment of the R503 Regional Route from the consented substation to a new substation to the north of Newport at Mountphillips. No suitable Hen Harrier foraging or nesting habitat within the SPA will therefore be lost with this proposal.

*Baseline ecological conditions of the Hen Harrier*

11.6.22. It was considered by Tipperary County Council within its first reason for refusal that the applicant has failed to demonstrate that the development of the site would not have an adverse impact on the integrity of the Slievefelim to Silvermines SPA having regard to the level of relevant survey information lodged in relation to the baseline ecological conditions of the Hen Harrier. It was noted in the Planner's Report that the sensitivity rating of Hen Harrier is very high and therefore up to date surveys are required to assess the potential level of impact to a high degree of certainty. Failure to adequately assess the potential use of areas used by the Hen Harrier outside the SPA and possible effects means that the full extent of effects of the development remained unknown to the Planning Authority.

11.6.23. The overall conclusion was that the NIS did not address the potential permanent loss of habitat outside the SPA and only loss of potentially suitable habitat for Hen Harrier within the SPA is evaluated. The key question raised by the NPWS in its submission dated 13<sup>th</sup> December 2018 is to what extent Hen Harriers breeding within the SPA are dependent upon suitable hunting habitat within the site of the proposed windfarm. This is taken to mean the Whole UWF Project.

11.6.24. The first party appeal response states that no nest location/ breeding sites are located within 2km of the proposed UWF Related Works. Reference is made to the EIAR (Appendix 8.1: Subsection 1.2.4.3), where it is stated that several Hen Harrier nest locations were within 1km of the construction boundary (three in 2016 and two in 2017) It is confirmed that this relates to the construction boundary of the May 2018 UWF Grid Connection planning application construction boundary. The nearest known historical nest location to the UWF Related Works is located c. 2.5km

south at Knockalough, with the last confirmed nesting attempt occurring in 2014. The last confirmed active nest (2018) is at Glenough, which is outside the SPA at a distance of 4.5km from the UWF Related Works boundary and 4km from the 2013 study area boundary. The closest recently active nest within the SPA to the UWF Related Works is 4.8km to the west of the nearest point of the construction works boundary. The current evaluation covers the period 2016-2018 inclusive.

- 11.6.25. It is also submitted in the first party appeal response that there is not sufficient hunting habitat within adjacent parts of the SPA to provide for any nearby nesting pair of Hen Harrier within the SPA, nor it is likely that one or more nesting pairs within the SPA will need to rely on hunting habitat within the windfarm. Habitat within 2km of the windfarm comprises mostly of managed grasslands that is generally of limited use for breeding Hen Harrier, whereas habitat within the SPA offers greater suitability for foraging Hen Harrier. It has also been found that distance to nest is a limiting factor for foraging and a study undertaken by UCC discovered that the concentration of hunting behaviour was more than 10 times higher within 1km of the nest than it was between 2 and 5km from the nest. The applicant therefore submits that there is no indication of significant use of the western side of the proposed windfarm by Hen Harrier.
- 11.6.26. The current appraisal is also informed by Hen Harrier surveys carried out from March 2015 to April 2017 to confirm that usage of the site has remained low during the breeding season with only five observations confirmed during this period. Only one bird was recorded within the windfarm boundary in March 2015 and no observed flight paths intersect the UWF Related Works. Pre-construction surveys at nearby Milestone Windfarm in 2015 and 2017 recorded three observations across two yearly periods of the breeding season. The results of the above surveys are considered by the applicant to demonstrate that there is no dependency by birds breeding within the SPA upon lands where the UWF Related Works are to be located. It is also submitted that the passage of time has not resulted in any new dependency by Hen Harrier for nesting or foraging on the baseline environment from 2013. Therefore, it is concluded that there is no dependent connectivity from the proposed UWF Related Works to the SPA. Notwithstanding this, construction works for the UWF Related Works will not be carried out during the Hen Harrier breeding season.

- 11.6.27. Fieldwork methodology for Hen Harrier is set out in Section 8.1.8.3 of the Revised EIAR. It is stated that existing records of Hen Harrier usage of the area dating back to 2003 were collated to establish suitable nesting or roosting habitat, with further consultation undertaken in January 2019. The 2km study area from the works area boundary in all directions was based on Scottish Natural Heritage Guidelines and on the basis that foraging habitat loss within 2km of a Hen Harrier nest may potentially have negative effects on breeding success (Arroyo *et al.*, 2014).
- 11.6.28. The assessment was also informed by terrestrial habitat surveys carried out from walkover surveys in July 2017. Habitat surveys were undertaken within a 50m buffer of works locations in accordance with best practice guidelines (Smith *et al.*, 2011) and classified in accordance with Fossitt (2000).

*Factors that can adversely affect the achievement of conservation objectives*

- 11.6.29. The UWF Related Works boundary overlaps the SPA boundary at the south-west of the site along the R503; however, no works associated with this application are proposed at this location. The works boundary also overlaps with the UWF Grid Connection (ABP-306204-19) boundary at this location and excavation works associated with this development will occur along the roadway. The nearest wind turbines will be approximately 500m from the boundary of the SPA. The proposed UWF Related Works will take place in the approximate location of the consented windfarm.
- 11.6.30. 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.
- 11.6.31. 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.



- 11.6.32. The main potential impacts to the favourable conservation status of Hen Harrier relate to the permanent or temporary reduction or loss of suitable foraging habitat and disturbance/ displacement of foraging Hen Harrier (ex-situ during breeding season). Land cover change may result in foraging habitat being temporarily unavailable to birds during key periods of the breeding cycle and the loss of foraging habitat within 2km of nest locations may result in reduced productivity and/ or nest success. Disturbance and displacement are most likely to occur during construction in critical periods of the breeding season.
- 11.6.33. In-combination impacts with other plans or projects may also give rise to reduction or loss of suitable foraging habitat or disturbance/ displacement of foraging Hen Harrier. Impacts will occur on land cover from provision of windfarm access roads, turbine hardstanding areas and substation compounds for the permitted windfarm. Landcover change will also take place from drainage, direct habitat loss through peat extraction or from forest maturation. There may be multiple sources of noise and visual intrusion and concurrent activity encountered sequentially by foraging birds. Overall, the potential sources of impacts relate to land use change; vegetation clearance; forestry felling; brash storage; earthworks; excavations; storage of overburden; movement of machinery; use of fuels, chemicals and cement-based compounds; dewatering of excavations; presence of construction personnel; and proximity to suitable ex-situ habitats.
- 11.6.34. Mitigation measures in the form of series of Project Design Environmental Protection Measures have been devised to avoid, prevent or reduce likely or significant effects on the environment. Those relating to Hen Harrier include the carrying out of breeding surveys to record all pre-nuptial activity, nesting activity and active nests within 2km of the construction works boundary prior to commencement, during and 3 years after construction. No UWF Related Works will be carried out during breeding season (March to August) and construction works within 1km of Hen Harrier roost will be limited to one hour after sunrise and one hour before sunset (Oct. to Feb.). No UWF Grid Connection works will be carried out within 2km of an active Hen Harrier nest.
- 11.6.35. 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 Related Works, in combination with other plans or projects, to avoid or reduce adverse effects on Hen Harrier to non-significant levels.

11.6.36. 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. A total area of 0.48 hectare of suitable foraging habitat will be lost within 50m of UWF Related Works, which represents only 0.28% of the total suitable foraging habitat within 50m of the UWF Related Works. The habitat type within the subject site, comprising mostly of grasslands and mature forestry, together with the fragmented nature of suitable habitat, mean that foraging habitat within the site is sub-optimal and habitat in the SPA offers greater suitability for foraging Hen Harrier. There is, and will probably continue to be, a sufficiently large habitat to maintain the Hen Harrier population on a long-term basis and the proposed development will not interfere with the natural range of the species.

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

11.6.38. 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.

11.6.39. I am also satisfied that the issues raised by observers relating to compliance with the Habitats Directive have been fully addressed. The proposed mitigation measures for Hen Harrier are do not fall under Section 6(4) of the Directive and the in-combination effects of the UWF Related Works with all elements of the Whole UWF Project and any other plan or project on each European Site are fully evaluated.

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

11.6.40. 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.

11.6.41. The UWF Related Works are at the eastern end of the SAC within the Bilboa River catchment, which in turn is within the Mulkear sub-catchment. 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.

11.6.42. 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. The Mulkear catchment excels as a grilse fishery and spring fish are caught on the river itself. Rich bryophyte flora has been recorded in the Bilboa River, Mulkear catchment, the nearest of which is 7km downstream of the UWF Related Works. Otter is also commonly found in the SAC and could be present in larger downstream watercourses.

11.6.43. There is potential for impact pathways between the UWF Related Works 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. Hydrological connectivity from the UWF Related works site to the Lower River Shannon exists via the Bilboa River.

*Factors that can adversely affect the achievement of conservation objectives*

- 11.6.44. At its nearest point, the subject site is approximately 1.5km to the north-east of the Lower River Shannon SAC. The proposed realigned windfarm road and closest turbines are approximately 3km east of the Bilboa River, which is also within the SAC. The UWF Related Works site lies on the boundary Shannon and Suir river catchments and there are a number of watercourses within the immediate vicinity. The majority of the UWF Related Works Site is located within the Suir catchment and the majority of the UWF Grid Connection site is within the Shannon catchment.
- 11.6.45. 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 Callitriche-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.
- 11.6.46. 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.
- 11.6.47. There are factors arising from the proposed development, in-combination with other plans/ projects, that can adversely affect the achievement of the conservation objectives for which the Lower River Shannon SAC is designated. In the absence of mitigation measures, the proposed development alone, and in combination with other plans/ projects, has the potential to adversely affect the maintenance or restoration of the favourable conservation condition of certain habitats and species for which the Lower River Shannon SAC is designated through riparian habitat

degradation; changes in flow regime; decrease in habitat quality via surface water runoff, sediment entrainment or release; release of fuels/ oils/ chemicals; surface/ ground water quality impacts; disturbance to fisheries; spread of aquatic invasive species; and disturbance to otter. In an unmanaged situation, impacts could occur on water runoff flow paths and watercourses/ landcover from movement of soil and machinery; earthworks, excavations & overburden storage; sediment; in-stream works; new crossing structures; use of fuels, chemicals & cement based compounds; excavation dewatering; and tree felling and brush storage. 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.

- 11.6.48. Potential cumulative impacts of the UWF Whole Project could occur from the crossing of 1 no. watercourses of fisheries value. Instream works are also proposed at 10 no. watercourse crossings and there is potential for introduction of non-native, invasive aquatic species at 96 no. watercourse crossings for the Whole UWF Project. A total of 15 no. watercourse crossing locations along UWF Grid Connection Route have potential to support otter and evidence of otter was found at three of these.
- 11.6.49. Mitigation measures for riparian and surface water impacts will include the implementation of a Sediment and Erosion Control Plan; the use of precast culverts; surface water drainage with check dams at realigned wind farm roads; phasing of watercourse crossings works; use of silt control measures such as silt fencing and containment berms; carrying out of in-stream works during 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.
- 11.6.50. 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 Related Works are also proposed for the protection of surface water quality during watercourse crossing works; excavation works within 50m of a watercourse; tree felling works; management of non-native invasive plant species; use of cement based compounds; storage and handling of fuels, oils and chemicals; 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 Related Works.

11.6.51. 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 4 above. The above mitigation measures will ensure that watercourse vegetation is maintained and that the proposed development will not adversely impact on water quality, flow regime, sub-stratum, floodplain connectivity or marginal fringing. The measures will also mitigate any potential impact causing disturbance to fisheries species, including Lamprey and Salmon. Disturbance will be limited to the footprint of instream works, access for aquatic species will be maintained and there will be no decline in spawning potential. There will also be no significant increase in barriers to connectivity for Otter and mitigation measures will ensure that couching sites are holts are not disturbed.

11.6.52. 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)**

11.6.53. The Lower River Suir SAC consists of the freshwater and tidal stretches of the River Suir, which flows through counties Tipperary, Kilkenny and Waterford before entering the sea at Waterford Harbour. The UWF Related Works are within the Clodiagh and Multeen River sub-catchments in the Lower Suir catchment area.

11.6.54. 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.

- 11.6.55. It is noted that the site is of particular conservation interest for the presence of Annex II animal species, including Freshwater Pearl Mussel, White-Clawed Crayfish, Salmon, the three species of Lamprey and Otter.
- 11.6.56. 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 Ranunculus fluitantis and Callitriche-Batrachion vegetation', Freshwater Pearl Mussel, White-clawed crayfish, Sea/ Brook/ River Lamprey, Atlantic Salmon and Otter.

*Factors that can adversely affect the achievement of conservation objectives*

- 11.6.57. The UWF Related Works are approximately 5km west Clodiagh River, 2.9km east of the Owenbeg River and 3km north-east of the Multeen River at points where these rivers enter the Lower River Suir SAC. A number of watercourses in the immediate vicinity of the UWF Related Works drain to these rivers and to a lesser extent to rivers/ streams within the Shannon catchment. The UWF Grid Connection commences within the Clodiagh catchment but is mostly within the Shannon catchment.
- 11.6.58. 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 Ranunculus fluitantis and Callitriche-Batrachion vegetation; Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels; White Clawed Crayfish and Otter. It is also the conservation objective to restore the favourable conservation condition of 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.
- 11.6.59. 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.

- 11.6.60. There are factors arising from the proposed development, in-combination with other plans/ projects, that can adversely affect the achievement of the conservation objectives for which the Lower River Suir SAC is designated. Alluvial woodlands (91E0), yew woodlands (91J0) and old sessile oak woods occur at significant distances downstream of the proposed UWF Related Works. Hydrophilous tall herb fringe communities (6430) are associated with alluvial woodlands. Watercourses of plain montane levels (3260) can relate to lowland rivers or upland streams with floating or submerged vegetation and aquatic mosses. The potential for hydrological connection with these QI exists and potential sources of impact from the UWF Related Works are movement of soil and machinery; earthworks, excavations and overburden storage; use of fuels, chemical and cement-based compounds; excavation dewatering; and tree felling and brash storage.
- 11.6.61. Observers James & Tanya Embleton noted the downstream presence of Freshwater Pearl Mussel. 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.
- 11.6.62. The UWF Related Works are located 17.5km upstream from the nearest crayfish population in the Clodiagh (Tipperary). There is potential for hydrological connection with this species, and with 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.
- 11.6.63. 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.

11.6.64. The targets and attributes for each of the qualifying interests that potentially could be adversely affected by the proposed development are set out in Table 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 connectivity for Otter and mitigation measures will ensure that couching sites are holts are not disturbed.

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

## 11.7. In-Combination Effects

11.7.1. The proposed development is described in planning application documentation as Upperchurch Windfarm (UWF) Related Works. The proposal is one of five elements of the "Whole UWF Project", including the UWF Grid Connection (ABP-306204-19), 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).

11.7.2. It should be noted that the original NIS carried out for the Whole UWF Project accompanying the planning application excluded, through the process of screening,

both the UWF Replacement Forestry and the Upperchurch Windfarm itself. It was considered by the Planning Authority that the exclusion at Stage 1 of these elements of the Overall UWF Project in close proximity to the SPA does not subsequently allow for cumulative impacts of these projects to be adequately assessed.

- 11.7.3. The Revised Appropriate Assessment Report (Screening and NIS and all associated appendices) accompanying the first party appeal evaluates the in-combination impacts of the UWF Related Works and all elements of the Whole UWF Project on each of the three European Sites. In addition, the scoping for assessment for other unrelated projects includes Castlewaller Windfarm; Bunkimalta Windfarm; Milestone Windfarm; a milking parlour, Bunkey, Lisnagry; industrial units, Thurles; Thurles Regional Water Treatment Works; and forestry/ agriculture turf cutting. This assessment concludes that the Castlewaller Windfarm, Bulkimalta Windfarm and forestry/ agriculture/ turf cutting should be scoped-in for potential in-combination impacts in terms of reduction or loss of suitable or potentially suitable Hen Harrier foraging habitat.
- 11.7.4. 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 Grid Connection, UWF Replacement Forestry, Upperchurch Windfarm and UWF Other Activities). An evaluation is then carried out for the Whole UWF Project. This analysis was complete and robust in terms of plans and projects and no likely significant impacts arose taking into account any residual impacts from the proposed development.
- 11.7.5. The potential for adverse effects due to in-combination effects with other projects and activities was excluded based on the following:
- UWF Related Works will take place on the approximate footprint of the permitted Upperchurch Windfarm,
  - UWF Grid Connection works will take place mostly along the route of the existing public road.
  - 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 will mostly be brief and small scale.
- Existing riparian habitat quality within works areas is 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 maintenance and forestry practices.
- Net gain in terms of land managed for use of Hen Harrier.

## 11.8. Appropriate Assessment Conclusions

- 11.8.1. Having carried out screening for appropriate assessment of the proposed Upperchurch Windfarm Related Works, both individually and in combination with other plans or projects, it was concluded that it would be likely to have a significant effect on the Slievefelim to Silvermines Mountains SPA, the Lower River Shannon SAC and the Lower River Suir 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.
- 11.8.2. Following an appropriate assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the Slievefelim to Silvermines Mountains SPA, the Lower River Shannon SAC and the Lower River Suir SAC or any other European site, in view of the site's Conservation Objectives. No reasonable scientific doubt remains as to the absence of such effects.
- 11.8.3. This conclusion is based on:
- A full and detailed assessment of all aspects of the proposed project including proposed mitigation measures and ecological monitoring in relation to the Conservation Objectives of the Slievefelim to Silvermines Mountains SPA, the Lower River Shannon SAC and the Lower River Suir 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 Grid Connection, 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 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 location of the nearest recorded Hen Harrier nests in excess of 4km from the UWF Related Works boundary - it has been demonstrated, beyond reasonable scientific doubt that distance to nest is a limiting factor for foraging and that it is primarily foraging habitat loss within 2km of a Hen Harrier nest that may potentially have negative effects on breeding success.
- Habitat within 2km of the windfarm comprises mostly of managed grasslands that are generally of limited use for breeding Hen Harrier, whereas habitat within the SPA offers greater suitability for foraging Hen Harrier.
- Hen Harrier surveys carried out from March 2015 to April 2017 confirming that usage of the site has remained low during the breeding season despite Slievefeilm to Silvermines Mountains being one of the strongholds for Hen Harrier in the country.
- Disturbance limited to the footprint of instream works, access for aquatic species will be maintained and there will be no decline in spawning potential.
- No significant increase in barriers to connectivity for Otter and mitigation measures will ensure that coaching 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.

## 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 a first party appeal against Tipperary County Council’s decision to refuse permission for proposed UWF Related Works. These works and the concurrent grid connection application to the Board are enabling works for a windfarm that was permitted by the Board in 2014. The proposed UWF Related Works will take place in the approximate location of the permitted windfarm. 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. As the turbines of the windfarm are already permitted, the planning application, appeal and supporting documentation do not assess the windfarm element of the Whole UWF Project from first principles. However, UWF Related Works are assessed both individually and cumulatively within the EIA and Appropriate Assessment with all other elements of the Whole UWF Project including the permitted windfarm. 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 were conducted up to 2018 and reviews were carried out in 2019. I consider that this information is suitably up to date having regard to the lodgement dates of the planning application, further information and the appeal submission dates.
- 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 (ex-situ 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 construction works boundary. Furthermore, the habitat type within the UWF Related Works site, comprising mostly of grasslands and mature forestry, together with the fragmented nature of suitable habitat, mean that foraging habitat within the subject site is sub-optimal, with habitat within the SPA offering greater suitability. Surveys have also confirmed that the usage of the appeal site by Hen Harrier has remained low over a substantial period of time.
- 12.7. Disturbance and displacement are most likely to occur during construction in critical periods of the breeding season. No UWF Related Works will be carried out during breeding season (March to August) and construction works within 1km of Hen

Harrier roost will be limited to one hour after sunrise and one hour before sunset (Oct. to Feb.).

12.8. 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. As the proposed works, together with any compensatory or mitigation measures through the Hen Harrier Management Scheme and UWF Replacement Forestry, are all located entirely outside of the SPA, these measures can be taken into account as part of the Appropriate Assessment carried out in accordance with Article 6(3).

12.9. 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 Revised EIAR and Revised Appropriate Assessment Report provides the Board with adequate information to fully assess the cumulative impacts and in-combination effects of the UWF Related Works, the Whole UWF Project and any other relevant plans or projects. As the proposed UWF Related Works 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:

- (a) national policy with regard to the development of sustainable energy sources,
- (b) the Wind Energy Development Guidelines for Planning Authorities issued by the Department of the Environment, Heritage and Local Government in June 2006,
- (c) 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,
- (d) the siting of the proposed development in the approximate location of the permitted windfarm and the purpose of the proposal as enabling infrastructure for the permitted windfarm,
- (e) the pattern of development in the area (including the separation distance to dwellings) and the pattern of permitted development in the area,
- (f) the limited scale of the proposed development,
- (g) the submissions on file, and
- (h) the report of the Inspector,

it is considered that, subject to compliance with the conditions set out below, the proposed development would not seriously injure the visual amenities of the area or of property in the vicinity, would not have an unacceptable impact on the landscape character of the area, would not be detrimental to the natural heritage or cultural heritage of the area, and would otherwise be in accordance with the proper planning and sustainable development of the area.

### **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); and the Lower River Shannon Special Area of Conservation ( Site Code: 002165).

### **Appropriate Assessment: Stage 2**

The Board considered the Natura Impact Statement, the Revised Appropriate Assessment Report and other associated documentation submitted with the application and appeal, 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, Revised 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 Revised 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 Revised 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 Revised 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** on the local economy from increased spending and jobs during the construction period and from payments to local landowners and from sourcing of stone and concrete.

Visitors to the area will be exposed to changes in the environment on a temporary basis during construction works. There will be no significant impacts

due to the distance from construction works to waymarked trails, the short duration of construction works and the non-intrusive nature of noise from turbines.

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 grid connection or Upperchurch Windfarm works.

- Potential for adverse effects on **Biodiversity** from slight to moderate magnitude arising from UWF Related Works and cumulatively with the Whole UWF Project with respect to aquatic habitats and species, Hen Harrier, general birds, non-volant animals and marsh fritillary.

Adverse impacts to aquatic habitat and species may occur due to a decrease in surface water quality, instream works at some watercourse crossings and species disturbance/ displacement from additional sedimentation or contamination. There is also the potential for adverse impacts through changes to flow regime. This will be mitigated through implementation of sensitive crossing designs in consultation with IFI. There will also be specific measures for reinstatement works including site-specific bank stabilisation, reinstatement of bank slope and character, creation of compound channels, and reinstatement of instream flow features.

Slight adverse impacts to Hen Harrier are expected from temporary or permanent reduction or loss of foraging habitat and disturbance/ displacement of foraging Hen Harrier (ex situ). As the majority of grid connection works will take place along the public road, disturbance or displacement effects of the Whole UWF Project will be no greater than for UWF Related Works. Mitigation measures for Hen Harrier include the prevention of construction works during Hen Harrier breeding season and during the roosting season (Oct - Feb) construction works within 1km of a roost will be limited to the period between one hour after sunrise to one hour before sunset. Monitoring of nesting and roosting Hen Harrier will take place within 2km and 1km of the construction works boundary respectively.

There will be cumulatively slight impacts to Golden Plover and Meadow Pipit in relation to habitat loss. However, all works will be outside the Irish breeding

range for Golden Plover and Meadow Pipit will benefit from enhancement measures for Hen Harrier. Hedgerow removal will take place outside the bird breeding season.

Moderate but temporary disturbance/ displacement effects to other mammals (Irish Hare, Pine Marten, Red Squirrel and Fallow Deer). Not significant to moderate adverse cumulative effects to badger and other mammals and not significant to slight adverse for Otter. Project Design Environmental Measure are proposed for otter and badger include relating to confirmation surveys and proximity of construction works.

Slight adverse impacts to Marsh Fritillary due to habitat loss arising from UWF Related Works and cumulatively with Upperchurch Windfarm works. Pre-construction surveys will be carried out for Devil's-bit Scabious (larval food plant of Marsh Fritillary) and this habitat will be strimmed/ cut in the last available late April/ early May prior to commencement of construction.

Cumulative impact to bats will be imperceptible to not significant. Project Design Environmental Measures that will reduce any impact on bats include the carrying out of construction works during daylight hours, cowling of lighting, confirmatory surveys, usage of bat boxes and installation of bat crossing structures at severed hedges.

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.

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 for slight to moderate adverse impact to **Soils** from excavation/ relocation and imperceptible or slight impacts in relation to erosion, compaction and contamination effects will be mitigated by Project Design Environmental Measures including the prohibition of land reinstatement during very wet weather; no batching of wet cement on site; immediate grading and seeding of permanent

overburden storage berms after emplacement; and refuelling of vehicles away from watercourses.

- Potential adverse impacts to local surface **Water** bodies could occur from morphological impacts to watercourses due to instream works, and from surface water quality impacts during conifer plantation, earthworks and dewatering of excavations resulting in contamination, increased flood risk and run-off. These will be mitigated by a suite of 18 environmental protection measures and 11 Best Practice Measures have been integrated into the project design to avoid or reduced any significant effect to the water environment. In addition, most of the watercourses to be crossed are minor and works are distributed within several water bodies over a large geographical area.
- 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 boundaries and road pavements. There is also the potential for impacts to road users from increased journey times arising from construction works and construction deliveries to the site. Cumulatively, the impact will be of an imperceptible to slight magnitude. Impacts will be mitigated through implementation of a traffic management plan and Project Design Environmental Protection Measure relating to the timing of construction works.
- 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 of 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, which 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 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 lodged with the application, as amended by the further plans and particulars submitted on the 9th day of November 2018, and by the further plans and particulars received by An Bord Pleanála on the 6 <sup>th</sup> day of February 2019, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.  <b>Reason:</b> In the interests of clarity.
2.	Apart from any departures specifically authorised by this permission, the development shall be carried out and completed in accordance with the

	<p>terms and conditions of the permission granted on under PL22.243040 and any agreements entered into thereunder.</p> <p><b>Reason:</b> In the interests of clarity.</p>
3.	<p>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.</p> <p><b>Reason:</b> In the interest of clarity.</p>
4.	<p>The mitigation measures contained in the Natura Impact Statement which was submitted with the appeal shall be implemented in full.</p> <p><b>Reason:</b> In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of European Sites.</p>
5.	<p>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.</p> <p><b>Reason:</b> To monitor the impact of the development on the local population of the Hen Harrier.</p>
6.	<p>Details of landscaping alongside the proposed access roadways, shall be submitted to and agreed in writing with, the planning authority, prior to commencement of development.</p> <p><b>Reason:</b> in the interest of landscape and visual amenity.</p>
7.	<p>In the event that the proposed development causes interference with telecommunications signals, effective measures shall be introduced to minimise such interference. Details of these measures, which shall be at the developer's expense, shall be submitted to, and agreed in writing with, the planning authority prior to commissioning of the turbines and following consultation with the relevant authorities.</p>

	<p><b>Reason:</b> In the interests of protecting telecommunications signals and of residential amenity.</p>
8.	<p>Details of aeronautical requirements shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. Subsequently the developer shall inform the planning authority and the Irish Aviation Authority of the co-ordinates of the 'as constructed' positions and highest point of the telecoms pole and turbines (to the top of the blade spin).</p> <p><b>Reason:</b> In the interest of air traffic safety.</p>
9.	<p>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 Revised Environmental Impact Assessment Report. The Construction Management Plan shall incorporate the following:</p> <ul style="list-style-type: none"> <li>(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,</li> <li>(b) a comprehensive programme for the implementation of all monitoring commitments made in the application and supporting documentation during the construction period,</li> <li>(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,</li> <li>(d) an emergency response plan, and</li> <li>(e) proposals in relation to public information and communication.</li> </ul>



	<p>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.</p> <p><b>Reason:</b> In the interests of environmental protection and orderly development.</p>
10.	<p>Details of the road network to be used by construction traffic and by the long-term maintenance traffic including detailed arrangements for the protection of bridges to be traversed shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.</p> <p><b>Reason:</b> In the interest of traffic safety.</p>
11.	<p>The applicant shall engage with the services of a suitably qualified archaeologist to monitor all topsoil stripping and groundworks associated with the development, licenced under the National Monuments Acts, 1930-1994. No sub-surface work shall be undertaken in the absence of an archaeologist without his/ her express consent.</p> <p>The archaeologist is required to notify the Heritage Division of the Department of Arts, Heritage &amp; the Gaeltacht in writing at least four weeks prior to the commencement of site preparations. This will allow the archaeologist sufficient time to obtain a licence to carry out the work.</p> <p>Should archaeological material be found during the course of monitoring, the archaeologist may have work on the site stopped, pending a decision as to how best to deal with the archaeology. The applicant shall be prepared to be advised by the Heritage Division of the Department of Arts, Heritage &amp; the Gaeltacht with regards to any necessary mitigating action (e.g. preservation in situ, or excavation) and shall facilitate the archaeologist in recording any material found.</p> <p>A buffer zone measuring at least 30m in width shall be established around Recorded Monument TN039-046 ring-barrow, which is located within the development area, as identified in the archaeological assessment included in the EIAR. No groundworks, landscaping, site offices, compound/ depot or storage facilities shall be established within this buffer zone.</p>

	<p>The Planning Authority and the Department of Arts, Heritage &amp; the Gaeltacht shall be furnished with a report describing the results of the archaeological monitoring, and including any necessary specialist reports, following the completion of all archaeological work on site.</p> <p><b>Reason:</b> To ensure the continued preservation (either in-situ or by record) of places, caves, sites, features or other objects of archaeological interest.</p>
12.	<p>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.</p> <p><b>Reason:</b> To ensure the satisfactory reinstatement of the delivery route.</p>
13.	<p>Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site upon cessation of the project coupled with an agreement empowering the planning authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.</p> <p><b>Reason:</b> To ensure satisfactory reinstatement of the site.</p>
14.	<p>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</p>

	<p>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.</p> <p><b>Reason:</b> 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.</p>
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Donal Donnelly  
Senior Planning Inspector

15<sup>th</sup> October 2020