Appropriate Assessment Screening Report
and
Natura Impact Statement
for
Wind Turbine at Templehouse, Co Sligo

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1.0 INTRODUCTION

1.1 Overview

This report has been prepared by Paul Murphy of EirEco Environmental Consultants on behalf of Natural Forces in respect of the proposed development of a single 5MW wind turbine at Templehouse, Co. Sligo. The objective is to determine the potential effects, if any, on the Natura 2000 network as a result of proposed development.

The nearest designated site is the Templehouse and Cloonacleigha Loughs Special Area of Conservation (site no. 000636) which is immediately adjacent to the proposed turbine location. This report presents a Stage 1 Screening which assess the potential for aspects of the project to have the potential to impact on the Natura 2000 network, and a Stage 2 Natura Impact Statement which addresses the potential for the proposed project to give rise to significant impacts on the qualifying interests of the Templehouse and Cloonacleigha Loughs SAC and provides measures to avoid such impacts where appropriate.

1.2 Guidance

Article 6(3) of the Habitats Directive states '*any plan or project not directly connected with or necessary to the management of the (*Natura 2000*) 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.*

This Screening Report has been prepared having regard to the following guidance documents:

- European Commission (2000) *Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats Directive' 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg.
- European Commission (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provision of Article 6 (3) and (4) of the Habitats Directive 92/443/EEC*. Office for Official Publications of the European Communities, Luxembourg.
- Department of Environment Heritage and Local Government (DoEHLG) (2008) *Circular Letter SEA 1/08 & NPWS 1/08 Appropriate Assessment of Land Use Plans.*
- Department of Environment, Heritage and Local Government (DoEHLG) (2010) *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.*
- Scottish Natural Heritage (2012) *Habitats Regulations Appraisal of Plans: Guidance for Plan-Making Bodies in Scotland. Version 2.0. August 2012.*
- Scottish Natural Heritage (2012) *Habitats Regulations Appraisal (HRA) Advice Sheet: Screening general policies and applying simple mitigation measures.*

1.3 Report Format

This assessment is laid out as follows:

- Description of the proposed development and existing environment;
- Natura 2000 Sites and Conservation Objectives;
- Stage 1 Screening;
- Stage 2 Natura Impact Assessment;
- Assessment of potential in-combination effects;
- Mitigation Measures
- Conclusion and final determination.

1.4 Approach

In accordance with guidance above the following approach has been undertaken with regard to this assessment:

The project is being assessed to determine:

- Whether aspects of the project have the potential to impact on the Natura 2000 network.
- Whether impacts would have both a spatial and temporal element, and can be described as 'the change of an environmental parameter, over a specified period and within a defined area'.
- Whether impacts could be considered as direct (primary) or indirect (secondary). Whether impacts have the potential to cause 'significant effects' on the Natura 2000 network.

A Source-Pathway-Receptor (SPR) model has been adopted to determine the potential of significant effect. In other words, the potential for a significant effect is dependent on:

- The 'Source' of potential impact (e.g. habitat removal, sediment run-off, vehicular emissions).
- The nature and magnitude of impact, taking into account the effectiveness of design measures at source (e.g. sediment traps), and any spatial or temporal effects;
- The existence of a 'Pathway' or vector between a source and receptor (e.g. Air, surface water, groundwater);
- Presence of a susceptible 'Receptor' where a pathway exists. Specifically, these are the qualifying species and habitats for which there are conservation objectives associated with a Natura 2000 sites' structure and function, with the potential to be adversely affected by an individual impact or a combination of impacts. The significance of a significant effect is assessed both alone and in-combination with potential effects resulting from other plans or projects.

The likely zone of impact of the project is the geographic extent over which significant ecological effects are likely to occur. In accordance with the NPWS guidance *(Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities,* 2010) the zone of impact is established on a case-by-case basis with reference to the following key variables:

- The nature, size and location of the project;
- The sensitivities of the ecological receptors;
- The potential for cumulative effects.

1.5 Methodology

The site was surveyed on the 26th November 2020. The survey entailed mapping of habitats at and in the vicinity of the proposed turbine location, access road and all associated infrastructure. While the survey was undertaken outside of the growing season, it was possible to accurately classify habitats which are presented in this report following the Heritage Council Classification system (Fossitt, 2000). Records of rare or protected species of flora from the study area were determined from existing database including the National Biodiversity Data Centre (NBDC), the National Parks and Wildlife Service (NPWS) and the Botanical Society of Britain and Ireland (BSBI).

Evidence of and the suitability for protected species of fauna was assessed based on a combination of field signs, the nature of the habitats present and a review of databases including that of the NBDC, NPWS, BirdWatch Ireland (BWI) and Bat Conservation Ireland (BCI).

2.0 Description of Proposed Development & Existing Environment

2.1 Description of Proposed Development

The proposed development consists of the construction of a single 5MW wind turbine with associated hard stand and sub-station, with the up-grading of an existing access track for turf-cutting and the development of a section of new track across cutover bog to the turbine location. The connection to the grid will follow the existing road network for a distance of 11.5km. The proposed site layout showing turbine location and access track is shown in Figure 1. Figure 2 shows the grid connection while Figure 3 shows the details of the proposed turbine location and hardstand area.

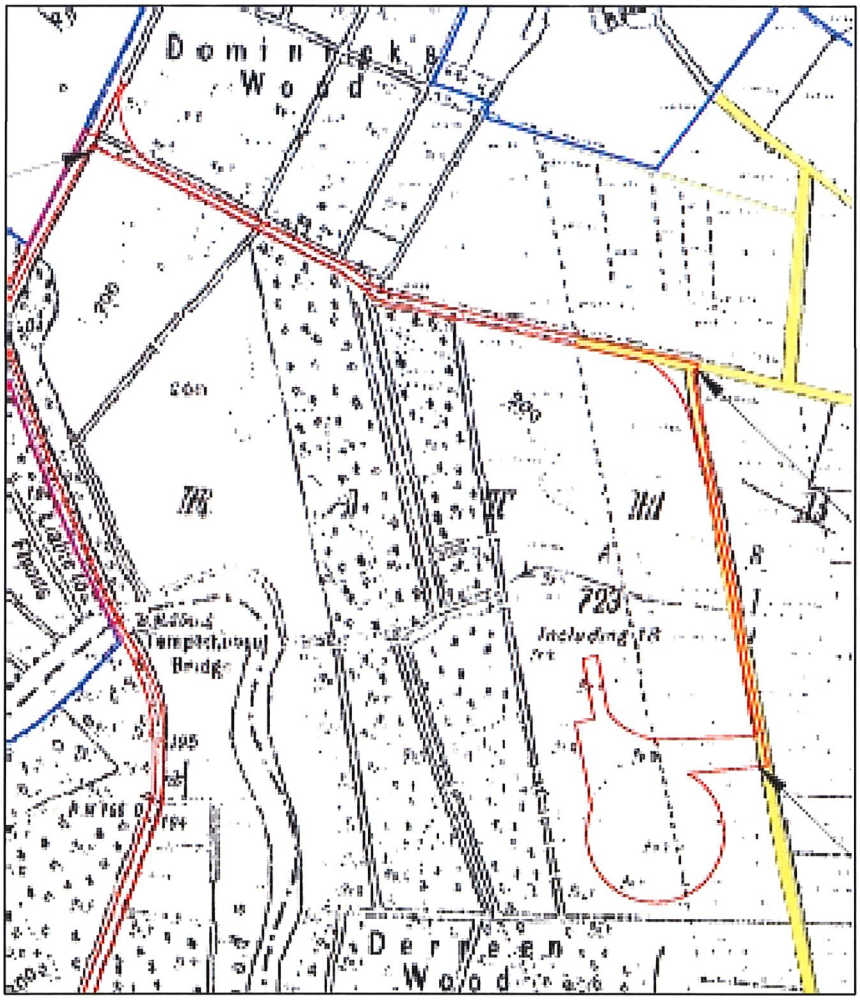

Figure 1. Site layout showing proposed turbine location and access road (in red).
(Source: Natural Forces)

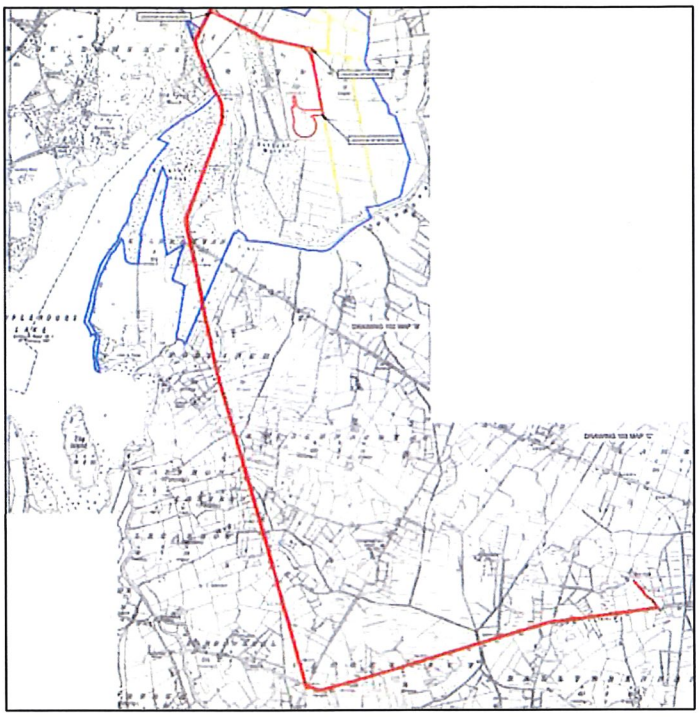

Figure 2. Grid connection route.
(*Source: Natural Forces*)

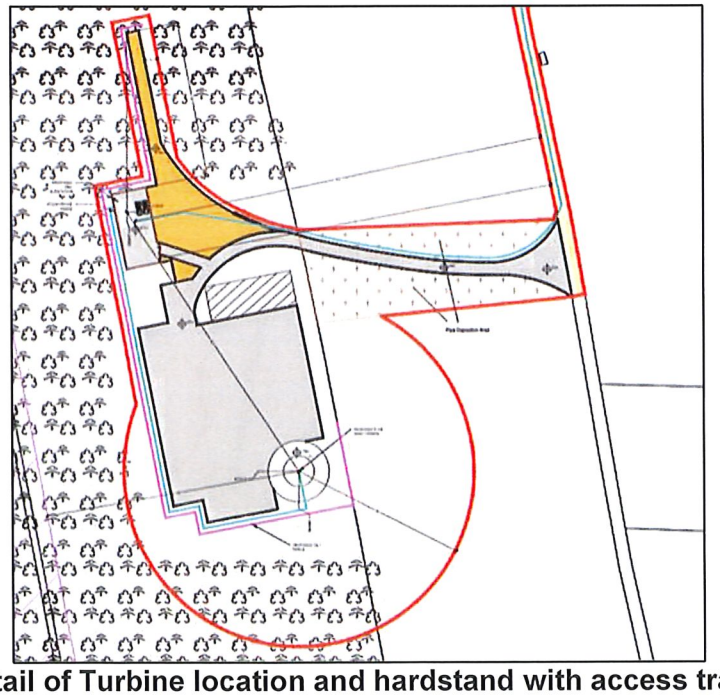

Figure 2. Detail of Turbine location and hardstand with access track and peat depository area.
(*Source: Natural Forces*)

2.2 Description of Existing Environment

2.2.1 Habitats

The habitats at Templehouse include the Lough and a range of associated wetland communities including fen vegetation, carr and wet woodland, mixed woodland, lowland wet grassland, raised bog and cut-away bog. The proposed access track runs along an existing track running from the Rathbaun to Collooney Road which leads from woodland onto an area of mainly cut-over raised bog. The proposed turbine location is within an area of conifer plantation adjacent to cutover area raised bog. The habitats can be seen in the aerial image in Figure 4.

Figure 4. Aerial image of study area.
(Source: Bing)

The existing track leading from the Rathbaun to Collooney Road is paved for a distance of 260m, after which it becomes a narrow track of c3m width which is partially encroached by adjacent scrub (WS1) for a distance of c300m (Figure 5). The scrub is comprised of willow (*Salix* spp.), birch (*Betula pubescens*), gorse (*Ulex europaeus*) and briar (*Rubus fruticosus* aggr.). The track is initially flanked by mixed woodland (WD2) and then by a planation of semi-mature pine (WD4) before extending into an area of cutover bog (PB4), known as Rathbaun Bog, with an open drain (WD4) along the northern side. It joins to a wider and regularly used track leading in a southerly direction through open mainly cutover bog as far as the take-off point for the wind turbine (Figure 6). The wind turbine location is set within the southern part of

the plantation of semi-mature pine (WD4) and the access track from the existing track will cross strip of cut-over bog (PB4) approximately 100m in width.

The bog habitat in the Rathbaun Bog varies considerably in condition from recent cut-over bog to some areas of intact bog with a more characteristic flora. The entire area of bog has been subject to drainage in the past however, and a network of drains runs throughout the area as can be seen in Figure 4. In the intact areas the vegetation is dominated by various bog mosses (*Sphagnum* spp.), ling (*Calluna vulgaris*), cross-leaved heath (*Erica tetralix*), deergrass (*Trichophorum caespitosum*), and abundant reindeer mosses (*Cladonia* spp.) with occasional asphodel (*Narthecium ossifragum*) and white-beaked sedge (*Rhynchospora alba*). The vegetation of the cut-over areas varies considerably dependant on the age of cutting, ranging from areas of bare ground or with a limited suite of early colonising species such as bog cotton (*Eriophorum* sp.) and purple moor grass (*Molinia caerulea*), to areas of complete vegetation cover, in some cases with occasional flooded depressions. The bog in the vicinity of where the proposed access track would link from the existing track to the turbine location (see Figure 7), has numerous faces from turf-cutting with a mixture of bare peat at the base of the cuttings, and heather dominated vegetation on the tops. The hydrology of this area has been heavily affected by both the cutting and the presence of numerous drains.

The conifer plantation within which the proposed turbine would be located is approximately twenty years in age. It is of mixed quality with some areas of poor take, especially in the vicinity of the proposed turbine. Where the canopy has not completely closed there is abundant purple moor-grass, briar and occasional willow and birch saplings.

To the west of the conifer plantation the woodland in the area varies considerably from mixed broad-leaved woodland (WD1) to Oak-birch-holly woodland (WN1), oak-ash-hazel woodland (WN2), wet willow-alder-ash woodland (WN6) and bog woodland (WN7). Kilbrattan Wood to the west of the Owenmore River is listed a native woodland under the National Survey of Native Woodland (2003-2008) and listed under the Ancient and Long Established Woodland Inventory (NPWS, 2010).

Figure 5. Access track at north end with adjacent conifer plantation.

Figure 6. Junction with main bog access track.

Figure 7. Location of proposed access track link to turbine location.

2.2.2 Fauna

The range of habitats present in the area is likely to support a diverse mammalian assemblage, though no evidence of any breeding or resting refugia was recorded in the location of the proposed turbine or along the access track network during the surveys. Signs of Irish hare was recorded on the bog, along with badger activity within the woodland during the site survey. The habitat mosaic in the area provides suitable habitat for pine marten, Irish stoat, hedgehog and red squirrel, with prime otter habitat present along the river and Templemore Lough. The drains within the bog area do not however, provide suitable otter habitat as they do not support fish, though periodic movement of animals may well occur.

While a considerable diversity of bat species is expected to occur in the area in view of the range of habitat types present, there are no potential roost sites in the immediate vicinity of the proposed access track or turbine location. Foraging activity by bats is expected to be high in the vicinity of the woodland and along its fringes. There are no records of the lesser horseshoe bat from the area, with the nearest record being at Tubbercurry, c13km to the southwest.

The habitats in the vicinity of the site support a wide range of bird fauna ranging from wetland species to woodland species. Ground nesting specie such as skylark, meadow pipit and snipe are likely to utilise the open bog habitat, while jay, sparrowhawk and woodcock would be expected in the woodland habitat. The Templehouse Estate has a managed woodcock shoot. The complex of loughs and wetland habitats are important for wintering waterfowl including teal, wigeon, mallard, tufted duck and goldeneye, lapwing and curlew along with a small number of Greenland white-fronted goose, a species listed on Annex I of the E.U. Birds Directive. The Lakes also support a range of breeding waterbirds including mute swan and great crested grebe, and the largest heronry in Co. Sligo, supporting approximately 16 breeding pairs.

There are a number of open drains along the access track leading into the Rathbaun Bog and through the bog itself, which had standing water at the time of the survey, though showed no evidence of flow. They would be likely to support a very limited macro-invertebrate community on account of the peaty substrate and lack of macrophyte vegetation. While the drains are un-suited to support any fish, they may provide breeding habitat for both common frog (*Rana temporaria*) and common newt (*Lissotriton vulgaris*). Common lizard (*Lacerta vivipara*) is also likely to occur on the blanket bog habitats.

3.0 NATURA 2000 SITES AND CONSERVATION OBJECTIVES

3.1 Identifying the European Sites to be Considered in the Assessment

The DoEHLG Guidance (2010) highlights that the approach to screening should be dependent on the scale and likely effects of the plan or project. This guidance states that the assessment should include:

- Any Natura 2000 site within or adjacent to the plan or project area; and
- Any Natura 2000 site within the potential zone of impact of the plan or project. With regard to zone of impact, for plans the guidance references the UK Guidance (Scott Wilson et al 2006) which sets a limit of 15km.

Both the DoEHLG and the Scottish Natural Heritage Guidance also refer to the need to check sites which may be separated by greater distances if they are connected (for example hydrologically) or if the impact of the plan or project is such that it could impact these sites.

The Scottish Natural Heritage Guidance (2012) also highlights that identifying the Natura 2000 sites that should be considered in the assessment is not always a straightforward process. The guidance states that "*It is important to ensure all sites potentially affected are considered, but it is equally important to avoid excessive data gathering about sites that are not likely to be affected and to keep the assessment proportional to the likelihood of significant effects.*"

3.2 Natura 2000 Sites

The only designated conservation area considered within a potential zone of impact from the proposed wind turbine and associated infrastructure is the Templehouse and Cloonacleigha Loughs Special Area of Conservation (Site Code No. 000636) which is immediately adjacent to the proposed access track and turbine location. Table 1 lists the features of Conservation Interest for the SAC while Figure 8 shows the SAC boundaries relative to the proposed development. The Site Synopsis for this SAC is presented in Appendix 1.

Table 1. Qualifying interest for Templehouse and Cloonacleigha Loughs SAC.

Feature of Conservation Interest
• [3140] Hard Water Lakes
• [3260] Floating River Vegetation

The next nearest designated area is the River Moy SAC (site code 002298) is c9km to the west of the proposed development site. The SAC is not hydrologically connected with the proposed development site and no other pathways of connectivity occur, and it is therefore screened out from further consideration. The Turloughmore SAC (site code 00637) which is c10km to the south-west is also not hydrologically connected with the proposed development site and has no other pathways of connectivity, and it is therefore also screened out from further consideration.

In view of the location and nature of the proposed works and the lack of potential pathways with other designated sites, consideration has only been given to potential impacts on the Templehouse and Cloonacleigha Loughs SAC and its qualifying interests. There are no other designated areas within a potential zone of influence of the works.

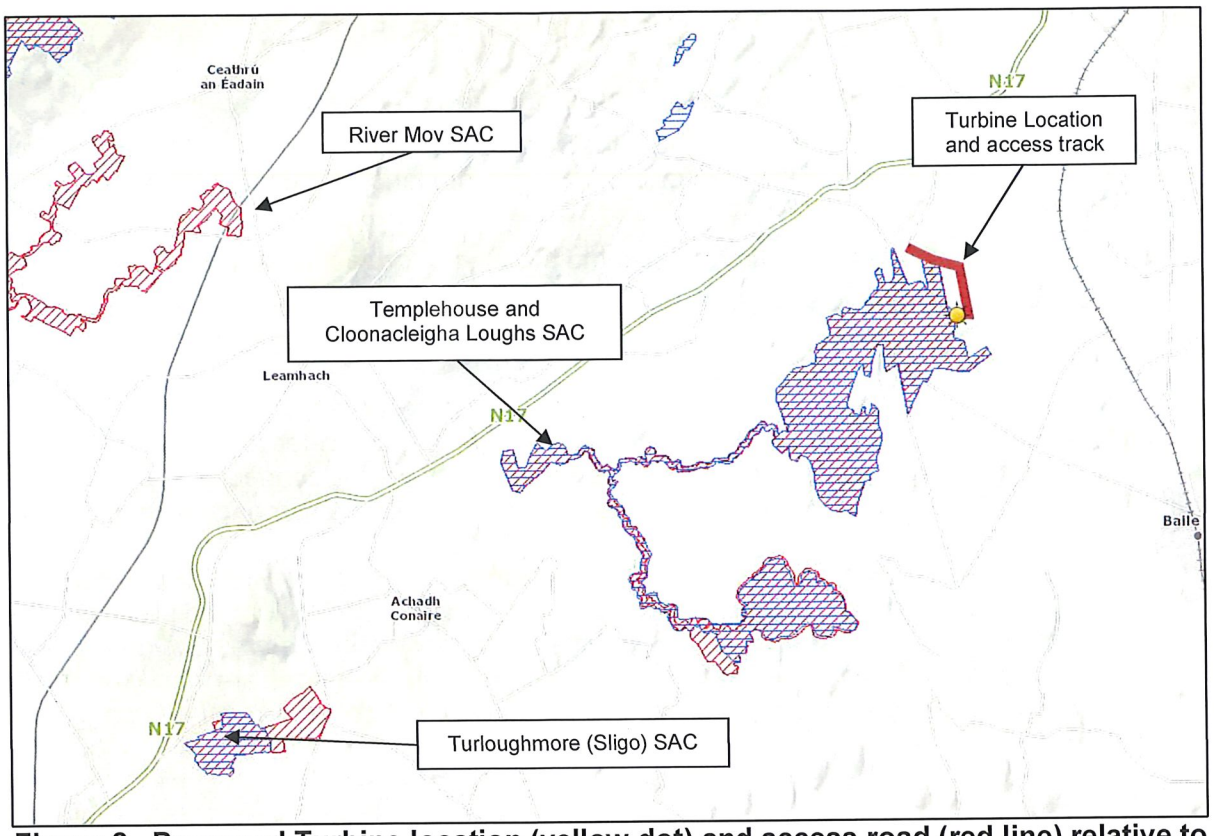

Figure 8. Proposed Turbine location (yellow dot) and access road (red line) relative to the Natura 2000 network.
(Source: NPWS Mapviewer)

3.3 Conservation Objectives and Favourable Conservation Status

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

3.4 Conservation Objectives for Templehouse and Cloonacleigha Loughs SAC

The primary conservation objective developed for the various Qualifying Interest habitats for the Templehouse and Cloonacleigha Loughs SAC, is to maintain or restore the favourable conservation status of the habitats and listed as qualifying interests for the SAC (NPWS, 2020).

The objectives define favourable conservation condition for a particular habitat (or species) is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing, and
- 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.

4.0 STAGE 1 SCREENING

4.1 Consideration of Likely Significant Effect

The 'Waddenzee ruling' of the European Court of Justice ruled that a project should be subject to appropriate assessment "*if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site, either alone or in combination with other plans and projects.*" A likely effect is therefore one that cannot be ruled out on the basis of objective information. "*The precautionary approach is fundamental and in cases of uncertainty it should be assumed that effects are significant*" (DEHLG 2010).

4.2 Identification of Potential Impacts

In practice and as outlined in the EU document *'Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC'* and the national guidance document *'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities'*, impacts that could potentially occur can be categorised under a number of headings as follows:

- *Impact on Annex I habitat;*
- *Loss / reduction of habitat area;*
- *Direct or indirect damage to the physical quality of the environment (e.g. water quality, hydrology and water flow alteration, soil compaction, etc.);*
- *Impact on Annex II species;*
- *Causing serious or ongoing disturbance to species or habitats for which the site is selected (e.g. noise, illumination, human activity);*
- *Causing direct or indirect damage to the size, characteristics or reproductive ability of populations of Natura 2000 site;*
- *Fragmentation of habitats or populations of species due to the location of development.*

The impact type which can occur is dependent on the attributes of the Qualifying Interests (habitats and species) for which the Natura 2000 site is designated. For the purposes of this assessment and in view of the nature of the proposed development, potential impacts have been categorised as follows and assessed below:

- *Direct and indirect loss of habitats;*
- *Impacts on water quality.*

4.3 Assessment of Potential Impacts on the Templehouse and Cloonacleigha Loughs SAC

This section assesses the likelihood of potential impacts from the proposed works involving the development of an access track and erection and operation of a single 5mw wind turbine on the Templehouse and Cloonacleigha Loughs SAC. The specific qualifying interests for the SAC and the potential for them to be impacted by the proposed works are summarised in Table 2.

Table 2. Qualifying Interests for the Templehouse and Cloonacleigha Loughs SAC with the potential to be impacted by the proposed works.

Qualifying Interest	Immediate Presence	Potential Impacts
Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	Located upstream of the proposed development.	No potential impact considered possible due to the location of the proposed development downstream of the habitat.
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	Potential occurrence in Owenmore River.	Potential impact from sedimentation arising from construction stage impacts.

4.3.1 *Direct and indirect loss of habitats*

The proposed development or construction works will not result in any direct or indirect loss of qualifying interest habitats for the Templehouse and Cloonacleigha Loughs SAC. The development will not directly impact on the SAC though will fringe its northern boundary along the access track to the turbine location.

4.3.2 *Impacts on Water Quality*

The Owenmore River is approximately 600m downstream from the proposed turbine location to which it is hydrologically connected via the drainage network on the cutover bog. There will be no works directly affecting the river either associated with the provision of the access track or the turbine location, though the grid connection will entail an overhead powerline spanning the river. The grid connection line is however, downstream and outside of the SAC boundary and is therefore considered to have no potential to impact on the qualifying interests of the SAC.

The drainage ditches in the vicinity of the access track and turbine location all drain to the Owenmore River, though due to the flat topography of the site, the drains do not have any apparent flow. As a result, the proposed works are considered to present a very low risk of resulting in any potential siltation or other effects on water quality within the river which would be likely to result in an impact (significant or otherwise) on the qualifying interest habitat *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation*. However, with consideration of the precautionary principle, a series of measures are prescribed to address all contingencies during the construction process in order to avoid any risk to water quality either at a local level or further afield within the Templehouse and Cloonacleigha Loughs SAC.

It is considered that the proposed works present a very minor risk of impacting on water quality during the construction phase within the Templehouse and Cloonacleigha Loughs SAC.

4.4 Screening Conclusion

The first stage of the Appropriate Assessment process, screening, has been completed in compliance with the relevant European Commission and national guidelines. The DEHLG (2010) guidance document states that screening can result in one of three possible conclusions or outcomes:

- AA is not required – the plan or project is directly connected to the management of the site;
- No potential for significant effects/AA is not required – screening concludes that there is no potential for significant effects; or
- Significant effects are certain, likely or uncertain – the plan or project must proceed to Stage 2 Appropriate Assessment.

On the basis of the Screening Assessment undertaken in Section 4 above, it is considered that the proposed works present a minor risk of impacting on water quality within the Owenmore River during the construction phase and thus could affect the qualifying interest habitat Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation listed as Qualifying Interests for the Templehouse and Cloonacleigha Loughs SAC. There is therefore, a requirement to proceed to Stage 2 Appropriate Assessment.

5. STAGE 2 NATURA IMPACT STATEMENT

The assessment questions listed below have been sourced from Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2001).

Describe the individual elements of the plan (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site:

The proposed development is considered to have the potential to present a minor risk of impacting on water quality within the Owenmore River and thus could affect the qualifying interest habitat *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation* listed as Qualifying Interests for the Templehouse and Cloonacleigha Loughs SAC.

Describe any likely direct, indirect or secondary impacts of the plan (either alone or in combination with other plans or projects) on the Natura 2000 site:

The proposed development does not directly impact on a designated conservation area, though the access track to the proposed turbine location runs along the boundary of the Templehouse and Cloonacleigha Loughs SAC. It is considered that there is no potential for direct impacts on the SAC, though there is potential (without appropriate mitigation) to give rise to indirect impacts on the qualifying interest habitat *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation* as a result of a deterioration in water quality during the construction of the proposed development as there is hydrological connectivity with the SAC via the drainage ditch network.

Describe any likely significant changes to the site:

In the absence of appropriate mitigation the proposed development has the potential to result in a deterioration in water quality at a local level due to silt or other pollutants arising during construction entering the drainage network and extending downstream in to the SAC. This risk is primarily associated with silts though extends to include hydrocarbons as a result of fuel spillage or rupture of hydraulic hoses, etc. However, the drains which provides the potential hydraulic connectivity to the SAC have very slack flows, which significantly reduces the risk of silt or pollutant transfer, though does not eliminate it entirely.

Describe any likely impacts on the Natura 2000 site as a whole:

In the absence of mitigation, the proposed development in a worst case scenario could result in a deterioration in water quality within the Templehouse and Cloonacleigha Loughs SAC over the duration of the construction period. This would be most unlikely to affect the overall structure and function of the SAC though would inhibit the attainment of the conservation objectives for the qualifying interest habitat *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation.*

Provide indicators of significance as a result of the identification of the effects above:

Having had due regard to the scale and nature of the proposed development, the only potential indicator of significance would be a deterioration in water quality which could potentially affect the qualifying interest habitat *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation* within the SAC.

Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known:

The proposed development, in the absence of appropriate mitigation, has the potential to give rise to significant effects on the Templehouse and Cloonacleigha Loughs SAC as described above. However, the scale of magnitude of these impacts is dependent on the methodologies and measures employed during construction to contain and appropriately treat surface water run-off.

6. POTENTIAL IN-COMBINATION EFFECTS

An in-combination effect arises from incremental changes caused by other past, present or reasonably foreseeable future actions (plans or projects) together with the proposed development. Having considered that the proposed development, individually, has the potential to give rise to likely significant effects on the Templehouse and Cloonacleigha Loughs SAC, it is also considered that it has the potential to give rise to significant impacts in combination with other projects or plans.

There are no projects or plans that have been identified as posing a risk of giving rise to significant in-combination effects on the Templehouse and Cloonacleigha Loughs SAC. General agricultural, forestry and turf-cutting activities in the catchment are likely to result in increased loads of sediment and nutrients within the drainage network which would affect water quality within the SAC. However, these activities are not subject to AA and are thus excluded from consideration. In conclusion, no potential for significant negative in-combination effects are anticipated.

7. MITIGATION

This NIS has shown that, in the absence of appropriate mitigation measures, the proposed development may adversely affect the qualifying interest habitat *Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation* within the Templehouse and Cloonacleigha Loughs SAC in view of their Conservation Objectives.

The risks of an adverse impact relates primarily to the potential for silt-laden or polluted surface water emanating from the site during construction. There will be no direct loss or impact on any of the qualifying interest habitats for the SAC as a result of the construction.

This section outlines the specific measures which have been developed to mitigate against potential impacts that may arise from the proposed development on the Templehouse and Cloonacleigha Loughs SAC.

7.1 Mitigation for Construction

To avoid any risk of impacting on water quality within the Templehouse and Cloonacleigha Loughs SAC, the following measures will be implemented during all construction activities:

- The suite of specific measures detailed below will be integrated into the scheme design and incorporated into the Construction Environmental Management Plan (CEMP) aimed avoiding any risks from the proposed construction works resulting in a deterioration in water quality within the Owenmore River.
- Construction works will be undertaken in dry conditions outside of the winter period when the potential for surface run-off is at its lowest.
- A silt curtain will be erected between the site works and surface drains in the vicinity prior to any works commencing and will be monitored and maintained throughout the entire construction phase.

- Drainage from the access tracks and turbine hardstand will be directed to stilling ponds / sediment traps to allow for settlement of suspended solids before discharge to the existing drainage network.
- No concrete laitance or wash-out will be allowed enter any drainage ditches.
- The placement of culverts for drainage ditches will take place during a single operation during periods of no rainfall.
- All excavated soils or peat stripped will be stored at a minimum distance of 20m from any drainage ditch.
- The vegetation clearance along the access tracks will be kept to the minimum required for the re-surfacing or bolstering of the track to accommodate delivery of turbine components and the crane required for turbine erection.
- Excavated peat from the turbine base, hard stand and access track across the bog will be reinstated along the access track as shown in Figure 2. Any surplus peat will be disposed of to a licenced landfill facility.
- All equipment and material storage will be setback from existing drains, and spill containment and clean-up materials will be held on site at all times during construction works.
- Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with 110% spill containment. Any spillage of fuels, lubricants of hydraulic oils will be immediately contained and the contaminated soil removed from the site and properly disposed of to a licenced facility.
- Fuelling and lubrication of equipment will be carried out in a dedicated fuelling location.
- All construction machinery operating will be mechanically sound to avoid leaks of oils, hydraulic fluid etc.
- All wastes generated during the works will be appropriately stored on site before being disposed of in fully licensed facilities.

8. RESIDUAL EFFECTS

Following the application of the recommended mitigation measures detailed in Section 7, the proposed development will have no adverse effect, either alone or in combination with other plans and projects, on the integrity of the Templehouse and Cloonacleigha Loughs SAC or any other Natura 2000 site, in view of their Conservation Objectives.

9. CONCLUSION AND FINAL DETERMINATION

The information presented in this NIS was gathered by a combination of consultation, desk studies and field surveys. The methodology of the assessment was informed by both EU and national guidelines on assessments under Article 6 of the Habitats Directive. The assessment identified the potential for direct, indirect and secondary impacts on certain Qualifying Interests of the Templehouse and Cloonacleigha Loughs SAC as a result of impacts during the construction and operation of a single 5mw wind turbine and associated infrastructure at Templehouse, Co. Sligo.

Having concluded that the proposed development presented a risk of giving rise to impact on water quality within the Templehouse and Cloonacleigha Loughs SAC due to hydrological connectivity, this NIS has detailed specific mitigation measures which will address the identified risks to the SAC.

Considering all of the above, it is hereby concluded that, subject to the full and proper implementation of the mitigation measures detailed in Section 7 of this NIS, there will be no adverse effects on the integrity of the Templehouse and Cloonacleigha Loughs SAC or any Natura 2000 site, as a result of the proposed development, either individually or in combination with other plans and projects, and that no reasonable scientific doubt remains in this regard.

References

Department of Environment, Heritage and Local Government (2010). *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.*

European Commission (2002). *Assessment of plans and projects significantly affecting Natura 2000 site – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* Impact Assessments Unit, School of Planning, Oxford Brooks University.

Fossitt, J. (2000). *A Guide to Habitats in Ireland.* The Heritage Council.

National Parks and Wildlife Service. National Parks and Wildlife Service Public Mapviewer.aspx

NPWS (2020). *Conservation objectives for Templehouse and Cloonacleigha Loughs SAC* [000636]. Generic Version 7.0. Department of Culture, Heritage and the Gaeltacht.

Appendix 1.

SITE SYNOPSIS

(*Version date: 10.09.2013*)

Site Name: Templehouse and Cloonacleigha Loughs SAC
Site Code: 000636

This site is located approximately 5 km north-west of Ballymote, Co. Sligo. It comprises three shallow, hard water lakes - Templehouse Lough, Cloonacleigha Lough and Killawee Lough - which are inter-connected by the Owenmore River. The lakes are situated on Carboniferous limestone, but are surrounded by low, peat-covered hills.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[3140] Hard Water Lakes
[3260] Floating River Vegetation

Templehouse and Cloonacleigha Loughs support a wide diversity of wetland communities including floating and submerged aquatic habitats, tall fen vegetation, carr and wet woodland. Other habitats within the site are mixed woodland, lowland wet grassland, raised bog and cut-away bog.

The emergent vegetation of the lakes includes Common Reed (*Phragmites australis*), Common Club-rush (*Scirpus lacustris*), Slender Tufted-sedge (*Carex acuta*), Marsh-marigold (*Caltha palustris*), Marsh Willowherb (*Epilobium palustre*) and River Water-dropwort (*Oenanthe fluviatilis*). Yellow and White Water-lilies (*Nuphar lutea* and *Nymphaea alba*) and Ivy-leaved Duckweed (*Lemna trisulca*) dominate the floating vegetation. Five species of stonewort have been recorded from Cloonacleigha Lough: *Chara aspera*, *C. contraria*, *C. rudis*, *C. virgata* and *C. vulgaris* var. *longibracteata*, with the last-named also occurring in Templehouse Lough. Other submerged species present include Perfoliate Pondweed (*Potamogeton perfoliatus*), Spiked Water-milfoil (*Myriophyllum spicatum*) and Canadian Waterweed (*Elodea canadensis*). Also present along the shore of Cloonacleigha Lough are areas of fen and scraw (floating vegetation) which are rich in sedges (e.g. *Carex lasiocarpa, C. aquatilis, C. acuta*), along with fen pastureland with Tufted Hair-grass (*Deschampsia cespitosa*) and Tall Fescue (*Festuca arundinacea*). Mixed woodland occurs on the northern shores of Templehouse Lough. The dominant tree species are Pendunculate Oak (*Quercus robur*), Ash (*Fraxinus excelsior*), and Beech (*Fagus sylvatica*); small amounts of Grand Fir (*Abies grandis*) are also present. A dense understorey of Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*) occurs in some parts. Both the Beech and Ash are extensively regenerating. Areas of more natural woodland with birch (*Betula* Version *pubescens* and *B. pendula*), Rusty Willow (*Salix cinerea* subsp. *oleifolia*), Eared Willow (*S. aurita*), Bay Willow (*S. pentandra*), Ash and Alder (*Alnus glutinosa*) also occur. The Red Data Book species Bird Cherry (*Prunus padus*) is known from the Templehouse area and may occur within the site. Epiphytic lichens such as Cup-moss (*Cladonia pyxidata*) and beard-mosses (*Usnea* spp.) are abundant here. Ground flora species recorded include Bluebell (*Hyacinthoides non-scripta*), Woodruff (*Galium odoratum*), Dog's Mercury (*Mercurialis perennis*), Lords-and-Ladies (*Arum maculatum*), Meadowsweet (*Filipendula ulmaria*), Water Mint (*Mentha aquatica*) and Yellow Loosestrife (*Lysimachia vulgaris*).

The stretch of Owenmore River included in the site is meandering and slow-moving and hosts a diverse flora which achieves up to 80% coverage in places. Species present include Branched Bur-reed (*Sparganium erectum*), Yellow Water-lily, Broad-leaved Pondweed (*Potamogeton natans*), starworts (*Callitriche* spp.), River Water-dropwort and the non-native Monkeyflower (*Mimulus guttatus*). Tall fen vegetation, with stands of Common Reed, an abundance of sedges and a herb layer which includes the Red Data Book species Marsh Pea (*Lathyrus palustris*) occurs along the river.

The complex of loughs, woodland and river channels makes this an important site for birds, especially wintering waterfowl e.g. Teal, Wigeon, Mallard, Tufted Duck and Goldeneye. There is also a relatively large wader population, including Lapwing, Curlew and small numbers of Greenland White-fronted Goose, a species listed on Annex I of the E.U. Birds Directive. Many bird species breed in the area, including Mute Swan and Great Crested Grebe, and the largest heronry in Co. Sligo, supporting approximately 16 breeding pairs, is found on the shore of Templehouse Lough. Furthermore, a population of Woodcock is managed for shooting on the Templehouse estate.

Besides shooting, the area is used for coarse fishing and boating. Some agricultural land is included in the site and this is extensively grazed by sheep, and less so by cattle, and some hay is also cropped.

Potential threats to the site include: water pollution from domestic and agricultural sources; over-grazing of lough fringe vegetation and woodland ground flora; field drainage; peat cutting; and afforestation. A section of wetland has already been damaged by the construction of several large drains and some of its margins have been cut for turbary. Some conifer afforestation has also taken place.

A proposed drainage scheme for the Owenmore River, if implemented, would pose a major threat to the area. This would result in both habitat loss and changes in the structure and species composition of some habitats. These events could also affect the bird and mammal populations and possibly result in the loss of some of the rare and specialised plants found at the site.

Templehouse Lough, Cloonacleigha Lough and Killawee Lough, along with the Owenmore River, are an integral part of a scenic landscape. Within the site there is a diverse range of habitats, both aquatic and terrestrial, including two which are listed in the E.U. Habitats Directive. The site supports a range of uncommon plant species (some of these at their only known station for Co. Sligo), and most notably Marsh Pea. Furthermore, the site is of regional importance for birds. Overall it is of considerable conservation value.