Corkey Windfarm Repowering

Further Environmental Information Addendum No. 3 to Environmental Statement

Chapter 3 – Development Description
Chapter 7 – Hydrology, Hydrogeology, Geology, Soils and Peat
Chapter 8 – Ecology and Fisheries

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1 Non-Technical Summary

1. An application for the Corkey Windfarm Repowering (the "Development") was submitted to Causeway Coast & Glens Borough Council ("CC&GBC") in June 2019, accompanied by an Environmental Statement (ES). On 3rd July 2020, CC&GBC issued a 'Further Environmental Information Request' (FEI Request) as informed by a consultation response issued on 2nd July 2020 by the Northern Ireland government Department for Agriculture, Environment and Rural Affairs – Northern Ireland Environment Agency- Natural Environment Division (NIEA-NED).

2. This Addendum to the ES is the third addendum, with the previous two providing responses to requests for information from the Historic Environment Division (in March 2020, which added to the ES Chapter 11 – Archaeology) and DfI Rivers (in May 2020, which added to the ES Chapter 7 – Hydrology, Hydrogeology, Geology, Soils and Peat). Whilst this was requested as FEI, the large majority of what has been provided here is clarification of the material provided in the ES; either addressing points of procedure or providing detail that does not alter the conclusions of the assessment of environmental effects.

3. The FEI Request required further information to be provided in relation to:

- "*…the potential risk to the groundwater flow regime. This should consider the construction, operational and decommissioning phases and include clarification on the use of borrow pits*";
- A "*full ecological impact assessment of the proposed electrical grid connection, particularly with regard to European designated sites, priority habitats (including active peatland), protected and priority species, and sensitive bird species*";
- "*…the construction of T5 and proposed "embedded mitigation" measures, such as site drainage and SuDS infrastructure*";
- "*…the likely significant effects of the proposed development on peatland habitats, including active peatland, to take into account the direct and indirect effects of this infrastructure on these sensitive habitats*"; and
- "*…the proposed grazing regime, cessation of all damaging management and agricultural activities, extended monitoring period and confirmation of landowner agreement with all measures within the revised HMP* [(Habitat Management Plan)]".

4. Additional comments were made in the NIEA-NED response in respect of:

- The proposed operational lifetime of the Development, with the assumption that it would be limited by planning condition, if granted; and
- A preference for a Bat Monitoring and Mitigation Plan to be produced and implemented for the Development.

1.1 Addendum to the Development Description

5. The Habitat Management Plan (HMP) has been amended, with version 3 included in this Addendum as Technical Appendix A3.2. The main changes proposed in the HMP follow consultation with NIEA-NED and are:

- Commitments are made to ensure that grazing levels are in line with guidance on bog restoration, rather than ensuring grazing levels were the same as currently;
- Commitments are made to place further restrictions on agricultural activities in the Habitat Management Area, with a list of prohibited activities designed to improve bog restoration; and
- The vegetation and hydrological monitoring schedule has been extended from year 9 to year 20, with monitoring proposed every 10 years thereafter throughout the operational phase, with annual visual checks.

6. The final form of electrical connection of the Development to the local or national grid, to allow the export of electricity from the Development, is unknown at the time of writing, and this is necessarily the case as a result of the procedural arrangements for connecting an independent electricity generating station to the electrical grid via application to the grid operator. The assessments in the ES for the Development therefore cannot take into consideration the effects of the grid connection. When the application for the grid connection is made, the effects of it will be assessed at that stage. Technical Appendix A3.3 sets this out in more detail. This is a point of procedural clarification rather than additional environmental information.

7. The planning permission in place for the Operational Corkey Windfarm is not time limited; it has permission to be operated in perpetuity. The application for the Development is made on the same basis; with effects assessed as permanent but reversible on decommissioning, which would occur depending on the technical capability of the Development. Historically, time limits on the operational phase of many renewable energy developments have been placed through planning conditions. This has prematurely curtailed generation of renewable energy, or led to additional administrative burden, cost and uncertainty through having to apply to extend the planning permission. NIEA-NED's response on 2nd July 2020 suggested it assumed that a similar restriction would be applied to the Development. This would not be in line with current trends elsewhere in the UK, however; this is set out in more detail in the informative provided in Technical Appendix A3.4. The Operational Corkey Windfarm has operated since 1994 (26 years to date) and it continues to operate, and there is no restriction placed on its operational life span in its planning permission. It will continue to operate until the Development is constructed, or until the turbines can no longer be maintained. At this point, driven by technical requirements, the Operational Corkey Windfarm would be decommissioned. This is the model proposed for the Development, and that which has been assessed in the ES. This is a point of clarification of approach rather than additional environmental information.

1.2 Addendum to the Assessment of Hydrology and Hydrogeology

8. The requirements of relevant guidance on the assessment of groundwater flow effects of windfarms, as directed by NIEA-NED, have been reviewed against the information and assessments provided in the ES. All information requirements were met by the ES, with effects on the groundwater assessed as negligible for all phases of the Development.

9. It is noted by NIEA-NED that the crane hardstanding for turbine T5 overlaps slightly with a watercourse. The crane hardstandings are, along with other Development components, subject to being slightly relocated during the detailed design phase, post-consent (known as micro-siting). In addition, the precise dimensions of the crane hardstanding will be determined at that stage. It could be that the crane hardstanding may not overlap the watercourse following detailed design, therefore. However, if necessary, the detailed design of drainage measures will be provided by the contractor prior to the construction phase and a suitably worded planning condition would ensure that NIEA-NED have the opportunity to comment on these before they are approved by the Local Planning Authority.

10. The indicative location of the proposed settlement lagoon serving the proposed T1 has been relocated to an existing crane hardstanding location, to avoid an area of active peat, and revised indicative locations of drainage features are provided with this Addendum. Figure 7.3 in this Addendum replaces the figure within Appendix A7.5 of Addendum 2 of the ES.

1.3 Addendum to the Assessment of Ecology and Fisheries

11. In response to consultation comments from DfI Rivers, an indicative drainage design was provided in a previous Addendum to the ES. This indicative design showed settlement lagoons and drainage ditches. The potential effect on habitats of these and the other proposed infrastructure has been assessed, and the conclusions on the effects are the same as set out in the ES. It is noted that the area of each habitat predicted to be affected may vary during detailed design, but with the controls in place in the form of the Ecological Clerk of Works and required consultee approval of detailed drainage design, the conclusions of the assessment of the significance of effects are made with high confidence.

12. The Applicant agrees to provide a Bat Monitoring and Mitigation Plan prior to the first turbine commencing operation, and to this being secured by an appropriately worded planning condition.

1.4 Conclusions

13. No changes to the conclusions of the ES are applicable as a result of this information.

2 Introduction

14. An application for the Corkey Windfarm Repowering (the "Development") was submitted to Causeway Coast & Glens Borough Council ("CC&GBC") in June 2019, accompanied by an Environmental Statement. On 3rd July 2020, CC&GBC issued a 'Further Environmental Information Request' as informed by a consultation response issued on 2nd July 2020 by the Northern Ireland government Department for Agriculture, Environment and Rural Affairs – Northern Ireland Environment Agency- Natural Environment Division (NIEA-NED).

15. This Addendum to the ES is the third addendum, with the previous two providing responses to requests for information from the Historic Environment Division (in March 2020, which added to the ES Chapter 11 – Archaeology) and DfI Rivers (in May 2020, which added to the ES Chapter 7 – Hydrology, Hydrogeology, Geology, Soils and Peat).

16. The FEI Request required further information to be provided in relation to:

- "…the potential risk to the groundwater flow regime. This should consider the construction, operational and decommissioning phases and include clarification on the use of borrow pits";
- A "full ecological impact assessment of the proposed electrical grid connection, particularly with regard to European designated sites, priority habitats (including active peatland), protected and priority species, and sensitive bird species";
- "…the construction of T5 and proposed "embedded mitigation" measures, such as site drainage and SuDS infrastructure";
- "…the likely significant effects of the proposed development on peatland habitats, including active peatland, to take into account the direct and indirect effects of this infrastructure on these sensitive habitats"; and
- "…the proposed grazing regime, cessation of all damaging management and agricultural activities, extended monitoring period and confirmation of landowner agreement with all measures within the revised HMP [(Habitat Management Plan)]".

17. Additional comments were made in the NIEA-NED response in respect of:

- The proposed operational lifetime of the Development, with the assumption that it would be limited by planning condition, if granted; and
- A preference for a Bat Monitoring and Mitigation Plan to be produced and implemented for the Development.

18. Further consultation was carried out in face to face (virtual) meetings with NIEA-NED staff on 23rd July and 11th September 2020 and CC&GBC staff on 31st July 2020 to discuss these issues and ensure that the material presented in this Addendum addressed as far as practicable the issues raised. All matters were agreed, subject to:

- Updating of the indicative drainage plan to show a settlement lagoon relocated from active peat to made ground, as provided in Section 4.3 of this revised version of the Addendum;
- Confirmation that landowners are obligated to fulfil the measures laid out in the Draft HMP (confirmation of this has been provided directly to NED, separately to this Addendum); and

- Confirmation by DfI's Departmental Solicitors' Office of the appropriateness of the treatment of the grid connection (being sought directly by NED, separately to this Addendum).

19. Section 3 of this Addendum addresses comments on the Habitat Management Plan (HMP), the grid connection and potential restrictions on the operational life of the Development.

20. Section 4 of this Addendum addresses comments relating to groundwater, drainage and SuDS.

21. Section 5 of this Addendum addresses comments relating to peatland habitats and construction-phase control measures.

3 Addendum to ES Chapter 3: Development Description

22. Chapter 3 of the ES provided a description of the Development and formed the basis of the assessments presented within Chapters 6 to 14 of the ES**.** It provided details of the decommissioning and construction, and operational phases of the Development. Chapter 3 of the ES remains appropriate in its original form; this Addendum does not alter any text in that chapter.

23. Brief commentary below, supported by the three Technical Appendices, addresses the NIEA-NED concerns relating to the Habitat Management Plan (HMP), the grid connection and potential planning permission restrictions on the operational life of the Development.

24. This Chapter of the ES is supported by the following Technical Appendices:

- Technical Appendix A3.2: Draft Habitat Management Plan (Draft HMP) version 3;
- Technical Appendix A3.3: Explanatory Note on Grid Connections; and
- Technical Appendix A3.4: Explanatory Note on Restricting the Operational Life by Planning Condition.

3.1 Draft HMP Revision

25. A revised version (v2) of the Draft HMP is provided in Technical Appendix A3.2. This replaces the version of the same document provided with the ES.

26. The changes made in this version follow consultation with NIEA-NED and are, in summary:

- Commitments are made in Section 7.2.6 to ensure that grazing levels are in line with guidance on bog restoration, rather than ensuring grazing levels were the same as currently;
- Commitments are made in Section 7.2.7 (new to this version) to place further restrictions on agricultural activities in the Habitat Management Area, with a list of prohibited activities designed to improve bog restoration; and
- The vegetation and hydrological monitoring schedule has been extended from year 9 to year 20, with monitoring proposed every 10 years thereafter throughout the operational phase, with annual visual checks;

27. The effect of these changes on ecology is set out in Section 5 of this Addendum.

3.2 Grid Connection

28. Section 3.5.6 of Chapter 3 of the ES described on-site cabling, the on-site substation and referred to a potential grid connection route for off-site connection. This Addendum does not alter any of that text, which remains appropriate.

29. An off-site grid connection, whilst required for the Development to export electricity, is not, and cannot be, part of the Development, because of the procedural arrangements for connecting an independent electricity generating station to the electrical grid via application to the grid operator. This aspect necessarily has to follow consent for the Development. Until that time, the nature, destination and route of the grid connection remains unknown. At that time, the environmental impacts of the proposed connection will be assessed in accordance with relevant law, and these would include cumulative

developments which would include the Development. The ES therefore presented as much assessment of the grid connection as is practicable at this time. Technical Appendix A3.3 expands on these issues. This is a point of procedural clarification rather than additional environmental information.

3.3 Operational Life

30. Section 3.9 of Chapter 3 of the ES states that "*no time limit on the operational lifespan of the Development has been assumed for the purposes of this assessment*". Decommissioning of the Development is proposed following the end of the operational phase, however, and the operational life is not assumed to be un-ending. Rather, no specific time limit has been assumed. No changes to this approach are proposed in this Addendum.

31. Historically, time limits on the operational phase of many renewable energy developments have been placed through planning conditions. This has prematurely curtailed generation of renewable energy, or led to additional administrative burden, cost and uncertainty through having to apply to extend the planning permission. NIEA-NED's response on 2nd July 2020 suggested it assumed that a similar restriction would be applied to the Development. This would not be in line with current trends elsewhere in the UK, however; this is set out in more detail in the informative provided in Technical Appendix A3.4. This is a point of clarification of approach rather than additional environmental information.

32. The planning permission in place for the Operational Corkey Windfarm is not time limited; it has permission to be operated in perpetuity. It has operated since 1994 (26 years to date) and it continues to operate. It will continue to operate until the Development is constructed, or until the turbines can no longer be maintained (as set out in Technical Appendix A3.4). At this point, driven by technical requirements, the Operational Corkey Windfarm would be decommissioned. The application for the Development is made on the same basis; with effects assessed as permanent but reversible on decommissioning, which would occur depending on the technical capability of the Development.

33. Through consultation with NIEA-NED since its issuance of its written response on 2nd July 2020, NIEA-NED has clarified that it would be satisfied with an operational phase of indefinite duration as long as certain ecological monitoring continued throughout the operational phase. This is addressed in Technical Appendix A3.2: Draft HMP version 3, and Section 5 of this Addendum.

4 Addendum to ES Chapter 7: Hydrology, Hydrogeology, Geology, Soils and Peat

4.1 The Groundwater Flow Regime

34. The NIEA-NED consultation response regarding the proposed repowering of Corkey requested that:

"*Further information is required on the potential risk to the groundwater flow regime. This should consider the construction, operational and decommissioning phases and include clarification on the use of borrow pits. Further information relating to the potential risks are detailed in Table 1 of the DAERA Environmental Advice for Planning Practice Guide for Wind farms and groundwater impacts".*

35. No borrow pits are proposed as part of the Development. Stone will be imported to the Site, as set out in the ES Chapter 3, Section 3.5.10, paragraph number 55.

36. Section 7.4.8 Hydrogeology of the ES states that '*The groundwater body under the majority of the Study Area is classified by the DAERA as having 'Poor' Bedrock Overall Status*'. GSNI GeoIndex mapping shows that no borehole logs are present at the site and given that the Development is located on basaltic geology at elevations of c. 300-400 mAOD for the majority of the Development infrastructure, it is unlikely that the water table will present near the surface.

37. The DAERA Environmental Advice for Planning Practice Guide for Wind farms and groundwater impacts (Updated 2019) guidance, Table 1: Potential impacts on groundwater from wind farms, outlines that groundwater impacts should be considered for the construction, operational and decommissioning phases of windfarm developments and the potential for impacts on the groundwater flow regime and the quality of groundwater should be identified.

38. The requirements set out in Table 1 of the guidance are met by the information already presented within the ES, as mapped in Tables 7.11 to 7.12, for the Development's construction and operational phases, respectively.

Table 7.11: Construction Phase: Guidance requirements, and where this information was presented in the ES

Text from Guidance	ES Reference
Earthworks and site drainage: Reduction in water table if dewatering is required for turbine foundation construction or borrow pits	Section 7.6.1.5.3 Private Water Supplies of the ES considers potential effects as a result of excavations and dewatering, which concludes a negligible effect on resources (near surface water and groundwater flow). Section 5.2 Earthworks Drainage of the WCEMP outlines how dewatering will be managed (if required) to limit potential effects on the water table.
Changes to groundwater distribution and flow	As above.
Disturbance of contaminated soil and subsequent groundwater pollution	Section 7.3.2.2 Elements Scoped out of Assessment of the ES states no contaminated land expected and effects scoped out of the assessment.
Pollution from spills or leaks of fuel, oil and building materials	Potential effects on groundwater from chemical pollution are considered negligible as outlined in section 7.6.1.2 Groundwater and Near-surface Water of the ES.

Table 7.12: Operational Phase: Guidance requirements, and where this information was presented in the ES

Text from Guidance	ES Reference
Physical presence of turbines and tracks: • Possible changes to groundwater distribution; • Reduction in groundwater storage	Section 7.6.2 Potential Operational Effects of the ES states that whilst alterations to natural flow pathways will not be introduced during the operational phase, any changes during the initial decommissioning /construction phases will continue through operation, as the majority of infrastructure will remain in place. Alterations to natural flow pathways will be reduced through adopting good practice design and construction methods, as set out in the outline DCEMP, such as cross drainage, use of shallow drainage ditches and prevention of blockages. As a result, the magnitude and significance of all effects associated with operation of the Development are assessed as being negligible, and not significant in terms of the EIA Regulations.
Reduction of forestry in site area: Changes to infiltration and surface runoff patterns, thereby influencing groundwater flow and distribution.	No felling is proposed as part of the Development and as such there will be no effects on groundwater or near-surface water.
Materials Management: Pollution from spills or leaks of fuel or oil	There will be a requirement for ad-hoc maintenance during the operational phase of the Development. Given the infrequent nature of the visits, large releases of pollutants are unlikely and would be restricted to minor fugitive releases. As such, the risk to the groundwater environment is substantially less than during the construction phase.

39. Regarding any future decommissioning of the Development following the operational phase, potential effects are considered similar in nature to those during the initial decommissioning of the Operational Corkey Windfarm (initial decommissioning phase) and construction phase, as some ground-work would be required to remove turbine foundations and hardstandings to 1 m below ground level. These effects would be substantially lesser in magnitude than during the combined initial decommissioning and construction phase, and would be controlled by a Pollution Prevention Plan (PPP). Where infrastructure would be left in place, drainage features would also be left in place, where this is compatible with the PPP. The ES addresses this position in Chapter 3, paragraph 13.

40. As such, the ES is compliant with *DAERA Environmental Advice for Planning Practice Guide for Wind farms and groundwater impacts (Updated 2019)* guidance, and the ES concludes that effects on groundwater are considered to be negligible and not significant in terms of the EIA Regulations.

4.2 The Construction of T5

41. The NIEA-NED response included comments from its Natural Environment Division (NED). NED's principal concern centres on the use of embedded mitigation in the absence of detailed drainage design:

"*…NED is concerned that, despite the natural watercourses on site being identified as a hard constraint to development and 50m buffers proposed, the construction of T5 and its associated hardstanding will occur directly on a natural watercourse. No details of how this will be constructed, nor on any specific mitigation, has been provided and instead the assessment relies on what is termed "embedded mitigation" as set out in the outline Decommissioning/Construction Environmental Management Plan (DCEMP) and the Water Construction Environmental Management Plan (WCEMP). NED has significant concerns with the description of the water quality and hydrological mitigation measures as "embedded mitigation" measures and the conclusions of the assessment*."

42. Measures described in the DCEMP and WCEMP are recognised, good construction practice that have been successfully employed on several windfarm sites following the provision of environmental compliance advice. The detailed drainage and pollution prevention measures will be designed by the contractor prior to the construction phase. A requirement to ensure this, should form part of a suitably worded planning condition, as per other applications of a similar nature. Example condition wording is provided below:

43. *No development in respect of this planning permission shall take place unless a Construction and Environment Management Plan (CEMP) has been submitted to and approved in writing by the planning authority, in consultation with NIEA-NED. The Statement/s shall integrate 'best practice' methods and mitigation measures identified in the Environmental Statement, and supplementary documentation supporting the application. The CEMP shall include plans to a suitable scale showing the location of any site compound or contractor's laydown area or area where any fuel, oil, lubricant, paint or solvent will be stored on site temporarily in connection with the construction of the development. The CEMP shall include the following matters:*

- *A sustainable drainage system (SuDS) design concept including run-off and sediment control measures; and flood risk management;*
- *details of foul drainage arrangements etc.*

44. The hardstanding associated with T5 would be subject to a micro-siting allowance of up to 50 m (as for the majority of the site) and one option for this may be that the area could be located to the southeast, although all options would be considered at detailed design stage in conjunction with ground conditions. In addition, the precise dimensions of the crane hardstanding will be determined at detailed design stage, and could be smaller than those assessed and shown on plans in the ES. Therefore, there may be no requirement to culvert the watercourse. The potential ecological effects of micro-siting were discussed in Chapter 8, Section 8.7.3 of the ES, as follows:

"113. All turbines will have a micro-siting flexibility of up to 50m to account for local ground conditions. The proposed Turbines 2, 3, 4 and 5 are located in areas of relatively homogenous habitat, so micro-siting of these turbines would not change the significance of any ecological effects. … The ECoW will review any proposed micro-siting for this Turbine in order to ensure that it has no additional effect on intact blanket bog. Similarly, any micro-siting of turbines within the 50m / 20m exclusion zones around streams / drains will be reviewed by the ECoW."

45. Irrespective of the micro-siting allowance, the detailed design of drainage measures will be provided by the contractor prior to the construction phase.

4.3 Drainage from T1

46. NED indicated a preference that the indicative location of the proposed settlement lagoon serving T1 (shown in Appendix A7.5 to Addendum 2 of the ES, submitted in May 2020) be relocated in a revised indicative drainage drawing, and the impact of this relocation be submitted and assessed as part of this Addendum.

47. NED noted that the indicative location of the settlement lagoon is on an area of active peat, which has implications for the potential loss of active peatland. Figure 7.8 of this Addendum shows a revised indicative location for the settlement lagoon at an area of existing hardstanding (made ground) associated with an existing wind turbine for the Operational Corkey Windfarm. Flow analysis has demonstrated that hardstanding for T1 (at an elevation of c. 410 mAOD) can be drained by gravity to the existing hardstanding (at an elevation of c. 405 mAOD) and therefore locating the lagoon at the existing

hardstanding is feasible. The lagoon at this location would serve only the infrastructure area associated with T1, rather than the wider catchment, and therefore would not need to be as large as shown previously. As such, the attenuation volume for surface water run-off associated with the hardstanding area for T1 has been calculated in Micro Drainage for the 1:100 year event, plus 20% climate change allowance, and the sizing of the lagoon scaled accordingly. The surface area of the revised settlement lagoon measures 750 m^2. The attenuation volume required for the access track and compounds will be provided by drainage ditches / swales immediately adjacent to these elements of the Development minimising habitat loss.

48. The revised indicative location of the lagoon and the drainage infrastructure which will serve T1 is shown in Figure 7.8 of this Addendum, which supersedes and replaces the "Drainage Catchments and SuDS" figure, provided in Appendix A7.5 to Addendum 2 of the ES, submitted in May 2020[1].

5 Addendum to ES Chapter 8: Ecology and Fisheries

5.1 Peatland Habitats

49. In NIEA-NED's consultation response dated 2 July 2020, NED requested:

"*A revised assessment of the likely significant effects of the proposed development on peatland habitats, including active peatland, to take into account the direct and indirect effects of this infrastructure on these sensitive habitats.*"

50. The direct impacts of the Development on peatland habitats were addressed in Chapter 8, Section 8.6.1.2 of the ES. Approximate areas of effect are provided for proposed turbine locations, hardstand platforms, internal roads, and temporary construction compounds. However, the indicative locations for construction-phase hydrological mitigation measures were not included at that time, and are presented here for the first time in Section 5.1.1. Commentary on indirect effects is provided in Section 5.1.2.

5.1.1 Direct effects

51. Figure 7.8 in this Addendum shows the indicative locations of construction-phase hydrological mitigation measures (drainage ditches and settlement lagoons), which would apply temporarily during the construction of the Development. Details of these measures are outlined in the Water Construction Environmental Management Plan in Technical Appendix A7.2, Volume III of the ES. The purpose of the drains and settlement lagoons is to capture surface water runoff from the development and allow suspended sediments to settle from solution, thus preventing impacts on habitats and waterbodies at the outflow points.

52. The construction-phase drainage ditches will not cause additional direct impacts on habitats, because they will be created immediately adjacent to roads (re-using existing drains where possible) and thus will be within the 10 m cross-sectional road width that has already been accounted for in Table 8.10. However, the settlement lagoons will require some excavation works, and thus will have a direct impact on underlying habitats. Indicative locations of settlement lagoons are shown in Figure 7.8 of this Addendum. It is noted that a previous version of this drawing submitted in Addendum No. 2 showed an indicative settlement lagoon in an area of blanket bog to the south of Turbine 1, but it has now been moved to a cleared turbine hardstand platform (from the Operational Corkey Windfarm), thus avoiding any direct impacts on blanket bog habitat. It is important to note that the settlement lagoon will only be required for the duration of construction works, and following the completion of construction works, the lagoon will be removed and re-instated to blanket bog habitat, as outlined in the Draft Habitat Management Plan (see Technical Appendix A3.2 in this document for the latest version, number 3).

53. In total, five settlement lagoons will be required during construction works. The impact assessment for habitats has been revised to include these calculations, based on the indicative locations of the lagoons as shown in Figure 7.8 of this Addendum. This requires the amendment of Chapter 8: Ecology and Fisheries of the ES, specifically Tables 8.10 and 8.11 and paragraphs 88 and 89. The revised tables 8.10 and 8.11 below replace the corresponding tables of the original ES.

[1] The discharge point information provided in the Schedule 6 Applications referred to in Appendix A7.5 to Addendum 2 of the ES would not change as a result of the changes to indicative locations made in this Addendum.

Table 8.10. Direct effects on habitats within the footprint of the Development

Component	Subdivision	Habitat type	Area affected (m^2)	Important Ecological Feature?
T1	Turbine and hardstand	Wet modified bog Existing hardstand Blanket bog	2,200 1,500 750	Y Y
	Roads: Site entrance to T1	Existing tracks	3,300	
	Turning arcs at bends south of T1	Blanket bog	500	Y
T2	Turbine and hardstand	Wet modified bog	4,500	Y
	Roads: T1 to T2	Existing tracks Wet modified bog	4,350 600	 Y
T3	Turbine and hardstand	Wet heath Wet modified bog	4,300 500	Y
	Roads: T2 to T3	Existing tracks Wet modified bog	2,000 300	 Y
T4	Turbine and hardstand	Acid grassland Wet heath	3,700 800	 Y
	Roads: T4 to T5	Wet heath Acid grassland	1,000 300	Y
T5	Turbine and hardstand	Wet heath	4,500	Y
	Roads: Main access track to T5	Acid grassland	350	
Compound to contain substation, control building and energy storage area		Improved agricultural grassland	1,925	
Temporary Construction Compounds		Made ground Improved agricultural grassland	2,500 12,750	
Temporary Construction-Phase Settlement Lagoons • South of Turbine 1 • North of Turbine 2 • South of Turbine 2 • West of Turbine 3 • South of Turbine 4		 Made ground Wet modified bog Wet modified bog Wet heath Acid grassland	 600 480 120 1,080 1,920	 Y Y Y Y
New access track		Improved agricultural grassland	11,700	
		Total	**69,845**	

Table 8.11. Cumulative effects on each habitat type, including an indication of the habitat loss within the landholding (representing a local context)

Habitat type	Total area affected (m^2)	Total habitat area	Percentage loss	Ecological Value
Blanket bog	1,250	207,816	0.6%	County
Wet modified bog	8,700	246,163	3.5%	Local
Wet heath	11,680	731,140	1.6%	Local
Acid grassland	6,270	573,072	1.1%	Negligible
Improved agricultural grassland	26,400	1,274,737	2.1%	Negligible
Existing road / surface	14,250,	28,774	49.5%%	Negligible

54. In Chapter 8, Section 8.6.1.2, paragraphs 88 and 89 of the ES, it was concluded that the Development would have:

"*permanent, unavoidable effects on 0.13 ha of blanket bog, 0.81 ha of wet modified bog and 1.06 ha of wet heath. All three habitats are Northern Ireland Priority Habitats. All other habitats within the Study Area are of Negligible ecological value, or will not be affected by the Development.*

It is noted that the losses of blanket bog, wet modified bog and wet heath would be 0.6%, 3.3% and 1.4% of the total extent of each habitat within the Study Area. On this basis, the magnitude of effect is considered to be imperceptible (capable of measurement, but without noticeable consequences) as outlined in Section 8.4.6.2 of this document. In accordance with Section 8.4.6.3, the loss of these habitats would not have a significant effect at a local context, and would be considered 'not significant' in terms of the EIA Regulations."

55. Following the addition of the temporary construction-phase settlement lagoons, the revised figures for direct effects would be 0.13 ha of blanket bog (unchanged), 0.87 ha of wet modified bog (an increase of 0.06 ha) and 1.16 ha of wet heath (an increase of 0.1 ha). This would represent 0.6% (unchanged), 3.5% (an increase of 0.2%) and 1.7% (an increase of 0.3%) of the total extent of each habitat within the Study Area. The increase in direct effects is considered to be negligible, and does not modify any further conclusions or text in the impact assessment, mitigation measures or residual effects. Furthermore, it is noted that the settlement lagoons will be removed after the completion of construction works and either re-instated to the original habitats (as outlined in Section 8.7.4 of the ES) or to blanket bog habitat (as outlined in the Draft Habitat Management Plan).

56. The numbers resulting from these calculations are estimates based on the design set out in the ES and in the paragraphs above. These designs may alter slightly during the detailed design phase, as a result of micro-siting. The effects as assessed above and in the ES have been reviewed against potential micro-siting potential, in the context of controls put in place through the Ecological Clerk of Works role, which is, in part, to review the detailed design and minimise likely effects. A high degree of confidence can be had in the conclusions of the assessment, therefore.

5.1.2 Indirect effects on peatlands

57. In NIEA-NED's consultation response dated 2 July 2020, the following was noted by NED:

"*NED would also highlight that no calculations or assessment of the indirect effects of the development on peatland habitats, such as through alterations to hydrology and pollution effects, has been provided. Calculation of the indirect effects of wind farm development on peatland habitats can be difficult, and are subject to professional opinion and the individual characteristics of the site, but it is likely that this would increase the overall figures provided for impacts to priority habitats. However, considering that most of the habitats on site have already been heavily modified and disturbed through past management practices and the construction of the existing Corkey wind farm it is not considered that this would be likely to significantly change the overall assessment*."

58. As noted in the consultation response, the Development has potential to indirectly affect peatland habitats through the following pathways:

- New excavations / depressions in peatland areas could cause lateral seepage from adjoining peatland exposures, resulting in desiccation. This could occur temporarily during construction works (e.g. excavation of turbine foundations), or permanently from new drainage features along roadsides;
- Interceptor drains alongside roads and hardstanding platforms could reduce the flow of groundwater / surface water into downhill peatland units, causing desiccation;
- Outflows from interceptor drains could increase the flow of surface water into receiving peatland habitats, causing saturation / ponding; and
- Outflows from interceptor drains may contain quantities of sediment or other non-peat substances that may alter the chemistry of peatland habitats at the discharge point, e.g. by increasing pH or nutrient inputs.

59. Many of the peatland units on the site have already been degraded by former management practices, including peat extraction, erosion and drainage. Dipwell monitoring at the site (refer to Section 7.4.2 of the ES and Technical Appendix A7.3) revealed that water tables in all peatland areas are lower than would be expected for unmodified bog, and thus that most areas are slightly to moderately desiccated. No significant areas of enrichment (or other chemical modification) were observed by the author during site inspections, but it is noted that most of the existing drainage ditches at the site discharge to other drains / streams rather than into soakaways in peatland areas.

60. It is very difficult to accurately predict the negative indirect effects of any development on peatland habitats, because there are a number of complex factors that will influence the scale of impact. For example, the effects of desiccation will be affected by topography, the baseline saturation levels of peat, inputs of groundwater / lateral seepage, inputs of rainwater (which vary by season), evapotranspiration rates (which vary by season), and the presence of anthropogenic modification that may alter

the ability of the peat to retain water (e.g. drainage ditches, clearance of surface vegetation). These factors vary on a fine scale over a peatland unit, e.g. based on hummock-hollow microtopography or distance from the nearest drain. On this basis, it is not possible to provide anything other than a general qualitative assessment of potential indirect effects.

61. Considering that the Development will be constructed on existing infrastructure and degraded peatland habitats, it is considered unlikely that it would cause significant additional indirect impacts. In addition, it is important to note that the Development will involve the restoration / enhancement of degraded peatlands as part of the Habitat Management Plan (version 3 of which is provided in Technical Appendix A3.2 of this document). It will include drain damming, seed-spreading, re-profiling of peat hags, restoration of blanket bog in areas of redundant infrastructure, and the cessation of deleterious land management. These measures will be overseen by an Ecological Clerk of Works and/or the applicant's ecologists, and will be monitored for the operational life of the Development. SuDS measures will be implemented during the decommissioning / construction and operational phases in order to channel runoff from site infrastructure and prevent significant changes in water chemistry.

62. The measures in the Draft Habitat Management Plan will have significant positive direct and indirect effects on peatland habitats. The SuDS measures during the decommissioning / construction and operational phases will avoid or minimise potential negative indirect effects on peatland units at the outflow points. On balance, the positive indirect effects on peatlands will more than outweigh any negative indirect effects.

63. For the avoidance of doubt, the commentary in this section adds to, rather than alters, the text in the Environmental Statement, which remains appropriate.

5.2 Bats

64. In NIEA-NED's consultation response dated 2 July 2020, the following was noted by NED:

"…NED considers that a Bat Monitoring and Mitigation Plan (BMMP) should be produced and implemented for the development. This should be submitted and agreed prior to the turbines becoming operational. The BMMP should include bat carcass searches at turbines and the monitoring of bat activity post construction for a period of at least three years (subject to review) and the submission of yearly monitoring reports to the planning authority. The BMMP should include provisions for the implementation of additional mitigation or contingency measures, such as curtailment of selected turbines, should significant bat casualties be detected. NED is content with the developer's suggestion at scoping meetings of a figure of more than two bat fatalities per turbine per year being used as a threshold for the implementation of curtailment measures at a particular turbine.

Additionally, NED recommends that the turbine blades are 'feathered' below the cut-in speed of the selected turbines to reduce the blade rotation speeds below 2rpm while idling. This measure has been shown to significantly reduce bat fatalities at operational wind farms and does not result in any loss of output. It can be applied at any site with a blade pitch control system which can be automated using SCADA data."

5.2.1 Bat Monitoring and Mitigation Plan (BMMP)

65. The applicant will commit to the preparation of a BMMP for the Development, which will be agreed with NED prior to the commencement of operation of the turbines. The monitoring strategy will be developed using standardised methods outlined by Scottish Natural Heritage (SNH 2019), and/or other relevant guidelines available at the time.

5.3 Revision to (Draft) Habitat Management Plan

66. Some revisions to the Draft HMP have been outlined in Section 3.1 of this document, including restrictions on certain activities on the land, e.g. flailing / burning of heather, creation or modification or drainage ditches. This will prevent any deterioration of habitat during the operation of the development, and ensure that the Habitat Management Plan achieves a net positive effect on biodiversity. The revised Draft HMP (version 3) is provided as Technical Appendix A3.2 in this document, which replaces version 2 that was presented in the ES.

67. For the avoidance of doubt, the revision to the Draft HMP does not require any changes to the existing text in, or conclusions of, Chapter 8 of the ES.

6 Conclusions

68. This Addendum has been provided at the request of CC&GBC for Further Environmental Information to address the concerns of NIEA-NED. Further consultation was carried out with NIEA-NED and CC&GBC staff prior to preparing this Addendum to discuss these issues and ensure that the material presented in this Addendum addressed as far as practicable the issues raised.

69. The additional information provided in this Addendum does not alter the assessment of effects provided in the ES.

KEY:

- DRAINAGE DITCH
- DRAINAGE DITCH OUTFALL
- DRAINAGE PIPE
- SETTLEMENT LAGOON

CORKEY SOUTH or LITTLE

RESERVOIR ROAD

EXISTING OPERATIONAL ACCESS/SITE ENTRANCE
PROPOSED WINDFARM TRACK ALIGNMENT

TEMPORARY CONSTRUCTION COMPOUND

LAGOON DIMENSIONS:
33.4(L) x 24.4(W) x 1.8(D)
VOLUME = 1950 M³

Q_{BAR} = 41.6 L/S

LAGOON DIMENSIONS:
19.8 (L) x 9.8(W) x 0.6(D)
VOLUME = 1950 M³

Q_{BAR} = 9.3 L/S

LAGOON DIMENSIONS:
28.6(L) x 18.6(W) x 1.7(D)
VOLUME = 904.3 M³

Q_{BAR} = 9.3 L/S

LAGOON DIMENSIONS:
72.8(L) x 32.8(W) x 1.6(D)
VOLUME = 3820.5 M³

Q_{BAR} = 57.3 L/S

LAGOON DIMENSIONS:
30(L) x 25(W) x 0.5(D)
VOLUME = 375 M³

ALIGNMENT 4B

ALIGNMENT 5

ALIGNMENT 1

T2

ESS

Wind Generator

Mast

Wind Farm

Filling Station

Corkey

Corkey Quarry

Conveyors

Waterfall

Rockend

Sewage Works

Sch

Ballure

Sheepfold

Knockagallan

Drumrankin Bridge

Mallaboy

Kilnagan Water

Kill Grave Yard (disused)

Ford

DRUMRANKIN

CARNAMENAGH

MONEYNEAGH

BM 155.74

BM 167.70

148.7

153.7

156.2

154.9

155.6

160.5

158.1

165.4

162.4

167.8

171.8

SCALE 1:2500

0 50 100 150 200 250m

N

Plot Date: 25 September 2020 16:18:21
File Name: N:\PROJECTS\2606 CORKEY WINDFARM REPOWERING\CAD\01-WORKING\01_01-DRAWINGS\2606_DR_P_0004-1_20200903

Revision Details	By / Check	Date	Rev

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Purpose of issue: PLANNING

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Project Title: CORKEY WINDFARM REPOWERING

Drawing Title: INDICATIVE DRAINAGE LAYOUT

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RD	RD	LN	LN

Arcus Internal Project No.: 2606
Scale @ A1: 1:5,000
Date: 24-09-20

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Drawing Number: FIGURE 7.8
Rev: -

Corkey Windfarm Repowering

Technical Appendix A3.2: Draft Habitat Management Plan (version 3)

Environmental Statement Addendum No. 3
September 2020

www.scottishpowerrenewables.com

SCOTTISHPOWER RENEWABLES

Corkey Windfarm Repowering

Technical Appendix 3.2

Draft Habitat Management Plan

August 2020

Version 3

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1 Introduction

The overall purpose of the Corkey Repowering Habitat Management Plan ("the HMP") is to implement positive land management for the benefit of landscape and nature conservation which will mitigate any adverse impacts that the Windfarm may have had. In addition to purely mitigating against any adverse impacts, ScottishPower Renewables is also committed to enhancing the nature conservation and landscape value of the Windfarm site. The HMP defines the Aims and Objectives of the land management that will be implemented on site to achieve this overall purpose.

1.1 Background

Corkey Windfarm Repowering comprises the removal of the existing turbines and replacing them with 5 new, larger turbines (Map 1).

This HMP was developed to describe how potential impacts the development may have on the surrounding habitat will be mitigated during the operational phase of the project. The focus of the mitigation measures is the restoration active blanket bog habitat.

The HMP includes the following:

1. Appropriate assessment and description of pre-construction, baseline habitat conditions;
2. Appropriate maps, clearly identifying habitat management areas;
3. Clear aims and objectives of proposed habitat management;
4. Detailed methodology and prescriptions of habitat management measures, including timescales and with defined criteria for the success of the measures;
5. The cessation of management measures that have a negative impact on peatland;
6. Details of regular monitoring of habitat management measures using fixed quadrat locations and contingency measures should monitoring reveal unfavourable results;
7. Details of the production of regular monitoring reports to be submitted to the Planning Authority at agreed intervals;
8. Confirmation of landowner agreement with all habitat management measures.

2 Land Ownership

Land within the site boundary is owned by multiple individuals and has been leased to SPR for the duration of the proposed windfarm development. The lease agreements include a provision to enable SPR to implement management works on the surrounding habitat.

3 Site Location and HMP area

The site is located 18km north of Ballymena. The Habitat Management Area ("the HMA") surrounds the windfarm and encompasses a range of habitat conditions (Map 2). The HMA covers a total area of 9.41ha of peatland habitat, which is considered adequate to compensate for the 0.13ha of blanket bog habitat and 0.81ha of wet modified bog predicted to be lost as part of the project (Corkey Windfarm Repowering Environmental Statement). The breakdown of this is shown in Table 1.

Name	Area (ha)
Unit A	4.36
Unit B	2.36
Unit C	1.50
Unit D	0.75

Unit E	0.44
Total	**9.41**

Table 1: HMA breakdown

4 Snipe overview

Surveys carried out to inform the Environmental Statement identified between 4 – 8 snipe territories on the site. Snipe require a mosaic of habitats for nesting, feeding and chick rearing, including wet areas and pools which provide a source of insects. It is anticipated that the management measures outlined within the HMP will be of benefit to a number of bird species, but particularly snipe.

5 Habitat Condition

5.1 Overview

Prior to developing the HMP SPR commissioned a Phase 1 habitat survey to classify habitat type across the site. Where potentially sensitive habitats such as blanket bog or heath were identified, further surveys were carried out to inform condition and provide more detailed information on peat depth, vegetation composition and the underlying site hydrology. The deepest peat was located on the eastern hill plateau (circa. 3m maximum depth), although there are a number of shallow areas (<30cm) which have been cut historically. Peat depth typically decreases with elevation as the habitat transitions from a degraded bog to heathland and eventually to grassland.

5.2 Peatland habitat status

The peatland habitat across the site is generally in a degraded condition, to a greater or lesser extent, as a result of historical management activities including peat cutting, livestock grazing and drainage. The highest quality blanket bog is found to the south and east of the site (Unit A), with peat >50cm and the vegetation assemblage including abundant typical bog species such as *Sphagnum papillosum*. The hydrology in this area is relatively intact compared to the rest of the site, with a water table consistently closest to the surface compared to other parts of the site, albeit during extreme drought conditions (July 2018) the water table was more than 20cm below the surface which suggests the condition is not pristine (see Appendix A for further details). Grazing and drainage has been undertaken historically, with a number of drains still visible and active within the area (Photo 1).

Photos 1 & 2: Drain visible in Unit A (left) and bare peat recolonizing with *Eriophorum angustifolium* in Unit B (right)

Unit B has historically been cut leaving a bare peat surface with a peat depth of approximately only 30cm remaining. The two areas have quickly been recolonized by *Eriophorum angustifolium*, although there is limited presence of other vegetation species at present (Photo 2).

Unit C is comprised of five areas where there are very large drains present, all >1m wide and approximately 1m deep. These are highly active and will exert draw-down of water within the adjacent peat mass as well as intercepting saturation excess overland flow (Photos 3 & 4).

Photos 3 & 4: Two of the large drains bordering Unit B

Unit D is located on the hill summit between the proposed T2 and T3. The area is deeply hagged with peat continuing to erode around the exposed hags (Photo 5). As the hags continue to dry, oxidise and erode the peat is collapsing with the sediment deposition smothering the surrounding vegetation (Photo 6).

Photos 5 & 6: Elevated dry peat hags (left) and deposition of peat sediment (right)

Unit E comprises the three turbines and roads which are to be restored to blanket bog habitat following decommissioning of the original site. The areas are partly surrounded by Unit A, which comprises the highest quality blanket bog on the site, and are expected to return to a functional hydrological unit.

6 Aims and Objectives

6.1 Delivery Process

The delivery of an HMP is based on achieving the various Aims, which are assessed by measuring the extent to which clearly defined Objectives and their associated condition indicators have been met. The definition of each Objective is therefore a key requirement for an HMP to allow progress to be assessed in a quantified, objective way which has clear implications for whether the overall Aims are likely to be met and any management measures which need to be put in place or amended.

A summary of the stages is shown in Figure 1 which has been applied to each Objective within this HMP. For Objectives where the required management is not obvious, or the processes not well enough understood to allow them to be defined in detail, a programme of trials is advocated to allow the methods, costs, rates and effects of management measures to be assessed before being implemented more widely.

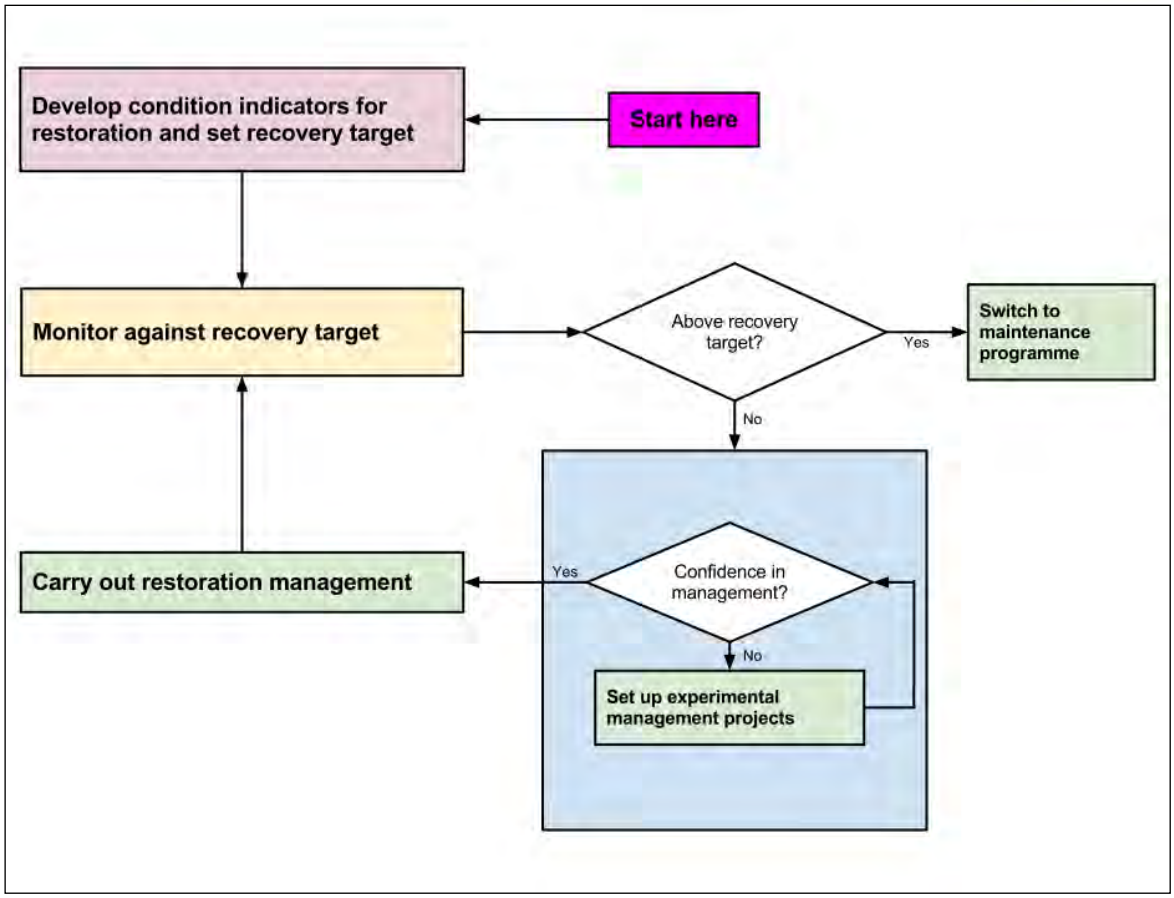

Figure 1: Process for monitoring and management to achieve habitat restoration, redrawn from Hurford and Schneider (2007).

6.2 Quantifying restoration outcomes

Some objectives are considered to be more fundamental than others to achieve in order for habitats to be restored, and have therefore been weighted accordingly (see individual objectives within each Aim for the weighting). This allows an overall weighted average score for the entire site to be produced out of 100 and compared against with Table 2 below, with 100 demonstrating each objective is met at every sample location. This method allows an overall assessment of restoration progress to be made.

Condition Class	Weighted Average Score
Very poor	< 60.0
Poor	60.01-70.0
Acceptable	70.01-80.0
Good	80.01-90.0
Excellent	90.01-100

Table 2: Scoring system for HMP targets

Table 3 shows the breakdown of each individual objective along with the weighting which is based on the relative importance for bog functioning. The highest weighting is given to bog water table as good

hydrology in critical to the function of a healthy bog habitat. Higher weighting is also given to the *Sphagnum* moss objectives as these are the constants of blanket bog habitat and also indicate the basic hydrology is intact.

Aim	Group	Objective	Short Description	Weighting
Aim 1: Underlying Conditions	Bog Water Table	1.1	WT in drought: <20cm	25%
		1.2	WT in drought: <10cm	15%
		1.3	WT in drought: 0cm	5%
Aim 2: Conservation Status	Sphagnum & Peat	2.1	Sph. present on plots	15%
		2.2	Thick sph. present on plots	5%
		2.3	Sph. cover >30% on plots	10%
		2.4	Sph. trampling absent on plots	2.5%
		2.5	Bare peat cover <1% on plots	5%
	Higher Plants	2.6	Eri. present on plots	5%
		2.7	Cal. present on plots	5%
		2.8	Cal. >20cm & <20% browsed	2.5%
		2.9	True grass cover <5% on plots	2.5%
		2.10	Key plant cover <75%	2.5%

Table 3: Weighted score given to each objective

The score for a treated area is therefore calculated as follows:

Weighted Average Score = Sum (% Samples which meet Obj. 1.1 * 0.25, % Samples which meet Obj. 1.2 * 0.15..., % Samples which meet Obj. 4.5 * 0.025)

Aims and Objectives are described for the areas of modified blanket bog below. The management measures for each area are described in Section 6, and a description of the monitoring is included in Section 7.

Aim 1: Restore conditions for modified blanket bog habitat

Definition and Distribution

Several areas within the site boundary have been identified as supporting modified bog habitat which would benefit from positive management activities (Map 2). Units A, B, C, D and E cover a total area of 9.41ha and are situated within the turbine envelope.

Background

The condition of the bog habitat across the site is generally poor, with the exception of Unit A in the south of the site. In order to create the underlying conditions required for the establishment of typical bog species, works will need to be carried out to reverse the negative historical management activities and prevent further degradation.

Condition Requirements

The condition required to support blanket bog habitat is a water table depth which is close to the surface throughout the year, including the drought period (typically April – June). Based on this requirement, a set of Objectives has been defined which will allow progress to be monitored.

Objectives

The Objectives for blanket bog conditions are shown in the table below along with the weighting. An Objective is considered to be met when at least 70% of sample plots meet the criteria.

	Objective	Description	Weighting
Bog water table	1.1	The bog water table should be no deeper than 20cm from the surface of the main peat mass on each sampled plot when assessed in summer 'drought conditions' (defined as the time at which water table levels on site are considered to in the lowest 10% of their measured range, and rainfall has been negligible for at least 3 weeks; surveys undertaken any time between 1st April and 31st August).	25%
	1.2	The bog water table should be no deeper than 10cm below the surface of the main peat mass on each sampled plot when assessed in summer 'drought conditions'.	15%
	1.3	The bog water table should be at or above the surface of the main peat mass on each sampled plot when assessed in summer 'drought conditions'.	5%

Aim 2: Improve quality of modified blanket bog habitat

Definition and Distribution

Several areas within the site boundary have been identified as supporting modified bog habitat which would benefit from management activities (Map 2). Units A, B, C, D and E cover a total area of 9.41ha and are situated within the turbine envelope.

Background

The long-term aspiration (>5 years) is to restore the habitat to high quality blanket bog. However, the precise vegetation assemblage which would be expected is difficult to define and variation is expected due to localised conditions (e.g. slope, aspect, mesotope position). The response of a set of common indicators of blanket bog quality will therefore be monitored which will ultimately help to gauge success. These common indicators have been incorporated into Objectives below.

Objectives

A number of indicators have been used to formulate Objectives which reflect different aspects of blanket bog quality over time. An Objective is considered to be met when at least 70% of sample plots meet the criteria.

	Objective	Description	Weighting
Sphagnum and peat	2.1	At least one species of Sphagnum should be present (predicted community M17, 18 or 19) on each sampled plot.	15%
	2.2	*Sphagnum papillosum* or *S. magellanicum* should be present (where expected type is M17 & 18) on each sampled plot.	5%
	2.3	Sphagnum spp. should account for at least 30% of basal cover on each sampled plot.	10%
	2.4	Visible trampling or uprooting impacts of large grazing mammals on Sphagnum hummocks (or lawns) should be absent on each sampled plot.	2.5%
	2.5	Bare peat should comprise <1% of 'basal' cover on each sampled plot, in situations where it is arising due to trampling effects or disturbance by machinery	5%
Higher plants	2.6	*Eriophorum* spp. should be present on each sampled plot.	*5%*
	2.7	*Calluna vulgaris* should be present on each sampled plot.	5%
	2.8	*Calluna vulgaris* of at least 20cm average canopy height and with < 20% leading shoots browsed by deer/sheep on average should be present on each sampled plot.	2.5%
	2.9	'True grasses' foliar cover should be less than 5% on each sampled plot. %	2.5%
	2.10	The combined cover of *Calluna vulgaris*, *Eriophorum* spp. and *Tricophorum cespitosum* should account for no more than 75% of foliar cover on each sampled plot.	2.5%

7 Habitat Management Measures

The management approaches taken by SPR reflect the different requirements of the variable site conditions. Management units are split according to treatment type and underlying habitat.

7.1 Management Units

Management units have been defined according to areas which require different types of active management, as shown in the table below.

Unit	Habitat	Size
A	Drained bog	4.36ha
B	Cut bog	2.36ha
C	Drained bog	1.50ha
D	Hagged bog	0.75ha
E	Infrastructure to bog	0.44ha
	Total area	**9.41ha**

7.2 Physical Interventions on degraded bog habitat

Physical interventions are defined as measures which comprise mechanical treatment to an area of land.

7.2.1 Units A & C: Drain damming

There are a number of drains across the site which would benefit from being dammed in order to prevent further damage to the hydrological regime. Approximately 2182m of these are located in Unit A, with an approximate size of 70cm wide x 50cm deep. SPR has developed a technique to successfully restore drained blanket bog, termed “wave damming” which has proven successful on a number of similar sites in Scotland (Photos 7 & 8). The method rapidly creates dams within existing drains to prevent water flow, which helps stabilize the hydrology and support bog forming species such as *Sphagnum* mosses. SPR initially tested this method at Black Law windfarm where a comprehensive monitoring programme was set up to verify the technique. The results proved the method to be successful in raising the water table, and showed that the pools quickly occluded with bog vegetation. SPR have now treated approximately 192km of drains at sites including Black Law and Whitelee windfarms and have found the technique to be consistently effective across different sites. Throughout the development of peatland restoration techniques, SPR have engaged stakeholders including Scottish Natural Heritage, Peatland Action and the Royal Society for the Protection of Birds, by demonstrating techniques and sharing the results of monitoring. Peatland Action has now adopted the wave damming technique for use on a number of sites[1]. A further description of the wave damming technique is provided in Appendix B.

[1] http://www.iucn-uk-peatlandprogramme.org/sites/www.iucn-uk-peatlandprogramme.org/files/file_attach/Session%208%20Combined%20Workshop%20Presentation.pdf

Photos 7 & 8: Area of wave damming at Black Law windfarm immediately following treatment (left) and two years post treatment (right)

There are also approximately 1679m of drains within Unit C that would benefit from some form of remediation work. These drains are larger in size (approximately 120cm wide x 100cm deep) and will require a combination of interventions including re-profiling, ditch infilling and dam creation. SPR have previously dealt with large drains on a number of sites and would adapt treatment to each drain based on its individual properties. Photo 9 shows three drains within Unit C which are all >1m x 1m but will require different treatments. The drains on the right of Photo 9 will be treated using a larger variation of the wave damming technique described above. The drain on the left of Photo 9 is a larger channel which has its original spoil heap still present. The spoil will be used to infill the drain and a combination of plastic piling and/ or conventional peat dams will be used to stabilise the drain and prevent runoff or collapse (Photos 10 & 11).

Photo 9: Three drains of varying condition within Unit C


Photos 10 & 11: Plastic piling (left) and conventional peat dam mid construction (right)

7.2.2 Unit B: Brash/ seed spreading

Areas B & C are currently circa. 50% bare peat (with no basal vegetation) and are initially being recolonized with primarily *Eriophorum angustoifolium,* a recognised pioneer species of saturated bare peat. It is expected that natural succession will lead to typical bog species, such as *Sphagnum papillosum*, establishing on the area in the future. SPR propose to monitor these areas and will consider the need for further intervention (e.g. brash/ seed spreading) in the event that the Objectives are not being met.

7.2.3 Unit D: Reprofiling

The elevated peat hags in Unit D are likely to continue eroding and collapsing as they no longer have a functional water table to enable the peat to persist. SPR propose to reprofile the area to flatten the area and allow the peat surface to be closer to the water table. Excess degraded peat from the hag mounds will either be used to infill the infrastructure restoration in Unit E or levelled and spread within Unit D (outcome dependent on final construction cut/fill balance and availability of peat for reinstatement of Unit E). For both options the turves will be separated from the peat and placed on top of the finished surface to promote rapid recolonisation.

7.2.4 Unit E: Infrastructure restoration

SPR will reuse as much of the existing infrastructure as possible for the repowering project, and any tracks or turbine pads that will not be reused will be decommissioned. The roads and turbines leading up to T1 and T10 are located within an area of high quality blanket bog on the site, and these sections will be decommissioned and restored to functioning bog habitat (Photo 12). This will include the removal of between 100cm – 150cm of material (to be reused in the repowering infrastructure), and infilling the void with peat.

Between 4,383m^3 – 6574.5m^3 of material will be removed from the existing turbines 1, 9 and 10 and the spur roads leading up to them, based on an excavation depth of 1m and 1.5m respectively, with material to be used elsewhere on the repowering site. Based on the peat depths present at the new infrastructure, approximately 12, 050m^3 of peat soils will be excavated from the repowering

infrastructure. This will generate enough material for use in infrastructure reinstatement, however peat may be required for other areas of reinstatement so additional material may be sourced from the hags in Unit D if required.

Photo 12: Road leading to T10 proposed to be decommissioned and restored

7.2.5 HMA: Cessation of peat cutting

Within the HMA there will be a cessation of turf extraction and peat cutting to prevent further habitat degradation.

7.2.6 HMA: Grazing management

Prior to commissioning of Corkey Windfarm repowering, SPR will determine the current levels of livestock grazing and grazing regimes within the HMA. DAERA have produced guidance on stocking densities and regimes for a range of bog habitats[2] and SPR will liaise with landowners to ensure that grazing levels are in line with this guidance to prevent further habitat degradation and aid habitat recovery. SPR will continue to monitor the HMA and if monitoring data suggest grazing levels are too high, SPR will liaise with landowners to reduce grazing. In accordance with existing management practices, stock welfare will be checked on a frequent basis and any fallen stock removed from the site to dissuade any scavengers (e.g. ravens).

7.2.7 HMA: Agricultural activities

In addition to measures concerning peat cutting and grazing management, SPR will implement further restrictions on certain agricultural activities within the HMA in order to prevent further degradation

[2] Sheep only grazing 1st March to 31st October at an average stocking rate not exceeding 0.075 LU/ha per year. Source: https://www.daera-ni.gov.uk/publications/efs-planner-instructions;

of the habitat and aid habitat recovery. The list of activities that will be prohibited within the HMA is as follows:

- Heather cutting, flailing, mowing or burning
- The creation of new drainage ditches or the maintenance or clearing out of existing moor grips or drainage ditches
- Cultivation, chain harrowing, fertilisation, reclaimation, mineral extraction, dumping, infilling or construction of new lanes
- Application of slurry, farmyard manure, lime, herbicides, pesticides, insecticides, sheep dip, fungicides, basic slag, sewage sludge and poultry litter
- Supplementary feeding sites, temporary silage clamps and storage areas for big bale silage
- Erection of new fencing

8 Monitoring Proposals

SPR has developed a protocol to monitor vegetation in relation to the objectives set out within this Habitat Management Plan based on extensive experience monitoring similar habitats across Scotland.

Monitoring will be undertaken on a set of n=30 permanent 1m radial samples in Units A, B, D and E (n=120 total). Unit C will monitored using fixed point photography only as it is linear in nature.

At each 1m radial sample the following information is collected for species relevant to the Objectives (target species):

1. Presence/absence of target species
2. By eye cover targets of key metrics (see 2a below)
3. Height and offtake of *Calluna*
4. Depth to water table (using fixed dipwell)
5. 3 pin hits of foliar and basal vegetation cover equally spaced along a 20m transect (long format only)

There are two monitoring methods used: a long monitoring protocol and short monitoring protocol. The short monitoring protocol only records items 1, 2, 3 and 4. The protocols will be applied according to the programme below.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 7	Year 9	Year 15	Year 20
Method	Long	Short	Long	Short	Long	Short	Long	Long	Long

Following the initial monitoring programme which covers up to year 20, the long monitoring protocol will be carried out every 10 years for the duration of the operational life of the windfarm.

In addition to the vegetation and hydrological monitoring, SPR will undertake visual checks of the site on an annual basis to confirm compliance with the aforementioned management measures and to check the overall condition of the habitat management areas.

Field protocol

1. Frequency Assessment

At each monitoring sample plot a rope demarcated at 0.25m, 0.50m and 1m will be used to form a radial quadrat. Starting with the smallest distance and working up to 1m, the presence of each target species is to be recorded, noting the smallest distance found. This nested unit size allows different sizes of sampling units to be applied to species of differing abundances for trend monitoring i.e. common species are assessed in smaller units, rarer species are assessed in larger units.

2. General Cover Assessment
   a) Record each by eye cover assessment within each frequency point (1m circle):
      i) is sphagnum cover > 30% (if unsure record lower)
      ii) is bare peat cover < 1% (if unsure record higher)
      iii) is true grass cover (excluding Molinia) < 5% (if unsure record higher)

iv) is the combined cover of Calluna, Eriophorum and Tricophorum < 75% (if unsure record higher)

3. Calluna height and offtake

Record the height of a representative *Calluna* plant within each 1m radial plot. Record *Calluna* height from top of the basal layer the depth of the basal layer to peat surface separately. Record the percentage of *Calluna* long shoots browsed.

4. Dipwell protocol

Permanent dipwells will be installed at each monitoring sample plot. During a drought period where there has been no limited rainfall in the preceding 14 days (typically between April and June, although can occur at other times), the dipwells will be measured by measuring from the top of the dipwell to the water table (termed “water depth”), and from the top of the dipwell to the main peat mass surface (termed “peat offset”). By subtracting the peat offset from the water depth it is possible to calculate the true value of the water table within the bog. On a quality bog the water table should remain within 20cm of the surface of the peat mass throughout the year.

5. Pin hits

At each monitoring sample plot a rope demarcated at 1m, 11m and 19m is set out to the west. At each marker point a laser pointer is stood on the north side of the rope and used to record any living plant species, litter or bare peat that it hits directly below. Both basal layer and higher vegetation are to be recorded.

Appendix A: Bog Hydrology

Dipwell measurements

Dipwells were installed on a grid across the site at 90m spacing (n=28). Measurements were taken during a drought period (defined as no significant rain in the preceding 2 weeks) to capture a period of stress when the bog water table is drawn down. On unmodified bog, monitoring has shown that the water table level remains within 10cm of the surface (or even less) during drought periods. This is considered to be critical for creating the conditions for specialist bog species such as *Sphagnum papillosum* to survive, and for maintaining the largely anoxic conditions within the catotelm which preserves plant remains as peat (i.e. "active" bog conditions).

The results showed that water table levels across the site were generally poor, with no dipwells supporting a water table level within 200mm of the surface during the drought period. Map 3 shows the spatial distribution of dipwells and the recorded water table depths (0 = water table was not within 100/200mm of the surface, 1 = water table was within 100/200mm of the surface). These results support the conclusion that the site is currently in degraded from a functional bog perspective, and that the site would benefit from interventions to restore the underlying hydrology.

A caveat to these data is that they were collected during a particularly extreme drought event during July 2018, where both rainfall was absent for more than 2 weeks prior to measurement as well as high temperatures. As such they level of drawdown in the bog water table may be more than the expected levels, albeit an area of reference intact blanket bog in western Scotland retained a water table within 200mm of the surface throughout the same period.

Appendix B: Wave damming summary

The process

1. Identify the drain. The excavator has tracked down the drain, flattening the vegetation and exposing the oxidised peat slope either side of the cut channel. The excavator will straddle the drain, facing upslope. The operator will begin working at the top of the slope, building the dams as they move downhill.

2. The operator will start work on one side of the dam, on the oxidised peat slope. The operator uses the bucket to cut into the peat mass circa. 800mm depth. The bucket is then used to pull the peat towards the excavator, thrusting material upwards. Care should be taken to ensure that the operator does not flip the peat during this process, and the vegetated surface remains on top.

3. Using the back of the bucket, the operator pushes the back of cut peat towards the machine so that it is compressed into place with a ramped face.

4. The operator will repeat this action a second time, in the middle of the drain.

5. The operator will then repeat this action a third time on the other side of the drain, on the oxidised peat slope. The dam is now three bucket widths wide, although additional width can be achieved using additional bucket widths.

6. The operator then uses the bucket to flatten and compress the top of the dam.

7. The operator then uses the bucket to flatten the edge of the cut face behind the dam. This will enable any livestock a way to climb out of the dam.

8. The finished process.

About wave damming

Timing

The time taken to build a wave dam is on average about 1minute; significantly faster than traditional dams which take over ten minutes to build.

Spacing

The wave dams are installed close together, roughly every 3-4m. This spacing was specified so that there was not more than a 10cm drop in ground level between each dam location so that water stored behind the dam can re-wet the intermediate drain space and adjacent ground. The spacing of dams is also dependent on local gradient.

Width

The width of the dam ensures that not only the ditch itself is blocked, but also the collapsed oxidised slopes on either side of the channel. This reduces the likelihood of a new hydrological flow around the side of the dam, and encourages the water to spread out and rewet the wider bog.

Corkey Windfarm Repowering

Technical Appendix A3.3: Planning Memo - Grid Connection Assessment

Environmental Statement Addendum No. 3
September 2020

SCOTTISHPOWER RENEWABLES

Planning Memo- Response to NIEA-NED Consultation Response *(2nd July)* Grid Connection Assessment

(i) NIEA- NED Request for Additional Information

In their NIEA-NED consultation response, dated 2nd July 2020, NIEA- NED sought the following additional information (amongst other natural heritage issues);

> *"1. Full ecological impact assessment of the proposed electrical grid connection, particularly with regard to European designated sites, priority habitats (including active peatland), protected and priority species, and sensitive bird species."*

The request for additional information on the grid connection is informed by the NIE-NED position that states;

> *NED is concerned with the lack of assessment provided for the proposed electrical grid connection. The EIA has not considered the significant environmental effects of the proposed 16km overhead power line for the grid connection. No ecological surveys or appropriate impact assessment has been carried out for this element of the project despite it being an integral part of the overall wind farm project. NED would highlight that overhead power lines have the potential to have significant effects on the environment, particularly on ornithological interests and landscape, but also on important habitats and protected and/or priority species. These significant effects would be in addition to any significant effects caused by the development as described and assessed in the ES - i.e. the decommissioning of the operational Corkey wind farm and the construction and operation of the new wind farm……*
>
> *Additionally, there have been a number of legal cases in the Republic of Ireland where court judgements have been made regarding the assessment of grid connection routes of proposed wind farms in an Environmental Impact Assessment (See: O Grianna & ors -v- An Bord Pleanála [2014]4 and Daly -v- Kilronan Windfarm Ltd [2017]5). These judgements have made clear that a wind farm development and its connection to the electricity grid are integral parts of one overall project and cannot lawfully be separated for the purposes of an EIA. Therefore, an appropriate environmental assessment must be carried out on both elements of the project, taking into account cumulative impacts, before planning permission can be granted. NED would highlight that any decision on the lawfulness or validity of the EIA rests with the planning authority."*

(ii) Purpose of Planning Memo

The purpose of this planning memo is to respond to NIEA- NED's consultation response regarding the grid connection assessment. The memo is informed by the (i) current project status including the grid connection, (ii) adherence to the EIA Regulations and Directive and the Habitats Regulations and (iii) legal advice from Shepherd & Wedderburn llp. The Corkey planning application approach to the EIA is valid and is not intended to circumvent the EIA Regulations or EIA Directive. This is on the basis that an EIA and HRA has been undertaken for the wind farm application and that an EIA and/or HRA will be undertaken at the time of the grid connection application in the event that it is likely to have significant effects on the environment, and so any cumulative or in-combination effects will be considered at the point of the grid connection application being submitted. The approach that has been taken is a consequence of the regulatory regime in NI which requires permission to be granted for a wind farm before a grid connection offer can be secured and therefore the detail of the grid connection is not known at the time of applying for permission for the wind farm. It is therefore not feasible for the onshore wind farm EIA to include an assessment of the grid connection as the details are not known. Furthermore, we cite that the referenced ROI caselaw (O Grianna & Ors -v- An Bord Pleanála [2014] IEHC 632 and Daly -v- Kilronan Windfarm Ltd [2017] IEHC 308) is not legally binding in Northern Ireland, as it is domestic caselaw albeit predicated on the EIA Regulations. Northern Ireland, in conjunction with Scotland, England and Wales have obligations, as part of their role within the UK, to meet the EU EIA

Directive, which include the requirement to comply with the EIA Regulations. The approach to Corkey EIA is consistent with best practice across the UK, where domestic planning regimes are more aligned.

(iii) Corkey Repower Planning Application (LA01/2019/0772/F)

The Corkey planning application does not seek planning permission for the grid connection. The grid connection does not form part of the planning application development description. As detailed in the submitted ES (chapter 3.0), the grid connection will be consented under a separate planning application process. However, the submitted ES does identify indicative details of likely routes and the anticipated method of connection (over ground or underground) providing 3 potential grid connection routes which represent the worst-case scenario. This approach is in line with the guidance provided in PPS18- Best Practice Guidance and the Strategic Planning Policy Statement. Paragraph 6.3.2 of the SPPS provides the following commentary on the grid connection issue:

> *"Some proposals for renewable energy development may require a connection to the National Grid. The grant of planning permission does not guarantee grid connection. Connection to the grid falls within the remit of Northern Ireland Electricity (NIE) and therefore liaison with NIE at an early stage of any renewable development but particularly a wind turbine / farm development is considered to be paramount in relation to the viability of such a scheme."*

Section 1.2.24 of the BPGs states the following regarding grid connections:

> *"Responsibility for the routing of electrical cabling onwards from the sub-station to the nearest suitable point of the local electricity distribution network is the responsibility of the District Network Operator, presently NIE (Northern Ireland Electricity). This will be achieved either by a standard 3-wire system mounted on wooden poles or by lines laid underground. It should be noted, however, that laying high voltage cables underground is much more expensive (around 6-20 times greater) than pole-mounted overhead systems and would be likely to be used only for limited lengths and/or in special circumstances. Whilst the routing of such lines by NIE is usually dealt with separate to the planning application for the wind farm, developers will generally be expected to provide indicative details of likely routes and the anticipated method of connection (over ground or underground)."*

The project Environmental Statement does have regard to the potential grid connection routes, and therefore it is inaccurate to state the windfarm and grid connection are being separated for the purposes of EIA. For illustrative purposes, the windfarm applicant included a figure showing potential routes to a potential connection point in the ES following preliminary discussions with NIE, but noted that this was in order to evaluate feasibility only and identify possible routeing options (for the future grid connection project, not for the windfarm). The EIA for the windfarm did not attempt to include assessment of any grid connection (an approach that was in line with the EIA Scoping report and consultation responses).

A decision on consent for a proposed development should be informed by the potential effects of the proposed development, including the cumulation of effects with other existing and/or approved projects (from the EIA Regulations). The windfarm would be approved first, and the EIA for the windfarm should assess the effects of the windfarm, with any other projects that are existing or approved – this does not include the grid connection which as is not progressed to a stage where it is possible to undertake a meaningful informed assessment. The grid connection route, insofar as it has been progressed, is outlined within the project ES.

(iv) Current Status of Grid Connection

The grid connection project has not yet been started, nor has it been defined in detail. The first stage is for NIE to identify the location at which the windfarm connection would be made with the existing grid – typically an existing substation. This has not yet been done by NIE, and detailed studies will be undertaken once the grid application is submitted and the grid offer signed by SPR. In NI grid connection offers cannot be secured until planning permission has been secured for the windfarm and consequently detailed feasibility studies are not commenced until post approval of the windfarm. The second stage is for NIE to propose a route, which may be not at all, partly or wholly along roads, and not at all, partly or

wholly be located below ground, all subject to landowner agreements and planning permission, noting that NIE as the statutory undertaker has certain, limited, permitted development rights. This has also not yet been done. The applicant has the option to undertake the "contestable" parts of the grid connection work (the majority of the overhead line/underground cable route) themselves, which would give them control of the route and whether it is above or below ground, subject to landowner agreements and planning permission. There is therefore no proposed connection point, and no proposed route, at this stage.

Any attempt at assessment of the grid connection would be fundamentally flawed, because the grid connection project being assessed may be not the one that will in future be proposed. In the context of this uncertainty, it is not possible to define a realistic worst-case scenario, nor could meaningful mitigation be proposed. As planning permission for the grid connection is not being sought. There is no mechanism in the current planning application to ensure that any potential grid connection (and associated mitigation measures) be lawfully approved.

(v) Grid Connection Route Assessment

The consenting of grid connection will be considered post-consent of the windfarm. Whether the grid connection approval is brought forward by NIE (as the statutory undertaker) or SPR (via contestable route), if the form and route of grid connection proposed had the potential for significant effects (subject to the provisions of 'The (Environmental Impact Assessment) Regulations (NI) 2017'), it would be EIA development and any permitted development rights would not apply (Para 3 (8) of 'The Planning (General Permitted Development) Order (NI) 2015). A planning application with EIA would be required. The EIA for the grid connection project should consider the effects of the grid connection, including the cumulation of effects with other existing and/or approved projects, which would by that point include the windfarm. The cumulative effects of the windfarm and the grid connection would therefore be fully considered in the grid connection application. If mitigation is required for the grid connection, it would be applied in the grid connection application process.

Furthermore, the grid consenting process will be subject to the Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended) ("Habitats Regulations"), and will be subject to assessment under Regulation 43 of the Habitats Regulations. Legislative provision within The Planning (General Permitted Development) Order (NI) 2015 ensures that permitted development rights do not bypass Habitat regulation obligations (refer to section 3 (1) of The Planning (General Permitted Development) Order (NI) 2015). The impact of the grid connection project (either alone or in combination with other plans or projects) upon the integrity of European sites will be screened and assessed in line with the Habitat Regulation requirements.

Whilst we recognise that the grid connection is an integral element of the windfarm development, permission is not being sought for the grid connection as part of this planning application. Furthermore, the grid connection has not been progressed to a stage where it is possible to define a realistic worst-case scenario in EIA terms, nor could meaningful mitigation be proposed for the grid connection and indeed any such mitigation measures could not be lawfully implemented as planning permission for the grid connection is not sought. The grid connection route options have been addressed by the ES, insofar as it can be at this stage. The subsequent grid connection consenting process will be subject to the provisions of 'The (Environmental Impact Assessment) Regulations (NI) 2017' and the and Appropriate Assessment/ Habitat Regulations Assessment (Article 6 of Habitat Directive) subject to the final grid connection routes. This is not an attempt to 'project-split' the Development, but rather reflects the current grid connection project status.

(vi) Legal Considerations

Our legal advisors have highlighted UK case law on "project splitting" that support the Corkey EIA approach, for example *R. (Larkfleet Ltd) v South Kesteven DC [2015] EWCA Civ 887* states:

> *37. It is true that the scrutiny of cumulative effects between two projects may involve less information than if the two sets of works are treated together as one project, and a planning authority should be astute to ensure that a developer has not sliced up what is in reality one project in order to try to make it easier to obtain planning permission for the first part*

> *of the project and thereby gain a foot in the door in relation to the remainder. But the EIA Directive and the jurisprudence of the Court of Justice recognise that it is legitimate for different development proposals to be brought forward at different times, even though they may have a degree of interaction, if they are different "projects"…*
>
> *38. The EIA Directive is intended to operate in a way which ensures that there is appropriate EIA scrutiny to protect the environment whilst avoiding undue delay in the operation of the planning control system which would be likely to follow if one were to say that all the environmental effects of every related set of works should be definitively examined before any of those sets of works could be allowed to proceed (and the disproportionate interference with the rights of landowners and developers and the public interest in allowing development to take place in appropriate cases which that would involve). Where two or more proposed linked sets of works are in contemplation, which are properly to be regarded as distinct "projects", the objective of environmental protection is sufficiently secured under the scheme of the Directive by consideration of their cumulative effects, so far as that is reasonably possible, in the EIA scrutiny applicable when permission for the first project (here, the link road) is sought, combined with the requirement for subsequent EIA scrutiny under the Directive for the second and each subsequent project...*

The EIA for the windfarm assessed the effects of the windfarm, with any other projects existing or approved, in line with requirements of the EIA Regulations. The grid connection will be subject to the EIA scrutiny under the EIA Directive and Regulations, including cumulative assessment with the consented windfarm (if approved) upon such time as the final grid connection has been agreed and progressed.

Further caselaw has also been cited by the legal advisors, specifically the Opinion of Advocate General Gulmann in *Bund Naturschutz in Bayern eV and Others v Freistaat Bayern (case C-396/92)* where he considered whether sections of a new link road, being promoted separately but also forming part of a much longer intended route, could lawfully be subject to an EIA which assessed only the environmental impact of the section for which development consent was sought or whether the road link as a whole had to be assessed. A-G Gulmann was of the opinion that an EIA is to be carried out for projects in respect of which the developer is seeking development consent noting that the "*result is confirmed by the difficulties which could arise in laying down what comprises an "entire project" when that concept is not the same as "a specific project in respect of which an application has been submitted". In addition, there might be difficulties in carrying out an environmental impact assessment as provided for in the directive for projects which have not yet been worked out in detail."*

The Opinion goes on to say that "*the purpose of the directive should not be lost by the projects which should be subject to an environmental impact assessment being given a form which renders an environmental impact assessment meaningless"* and that "*Member States must ensure that the obligation to carry out an environmental impact assessment is not circumvented by a definition that is over-strict or otherwise inappropriate, in the light of the purpose of the directive, of the projects in respect of which application must be made."*

The Opinion further explains that *"[t]he subject-matter and content of the environmental impact assessment must be established in the light of the purpose of the directive, which is, at the earliest possible stage in all the technical planning and decision-making processes, to obtain an overview of the effects of the projects on the environment and to have projects designed in such a way that they have the least possible effect on the environment, That purpose entails that as far as practically possible account should also be taken in the environmental impact assessment of any current plans to extend the specific project in hand."*

(vii) Conclusion

Having regard to the details outlined in this memo we highlight that the approach to the project EIA is a consequence of the NI regulatory regime, which is underpinned by current planning policy guidance (SPPS and PPS18 Best Practice Guidance). It is not intended to circumvent the aims or purpose of the

EIA Directive or Regulations as the grid connection application will be subject to an EIA at the time of application if it has the potential to give rise to likely significant effects on the environment. This will ensure that the grid connection assessment is meaningful as it will be based upon a scheme which has a degree of robustness/ surety, which cannot be provided for at this stage.

In light of sections (i) to (vii) a *"full ecological impact assessment of the proposed electrical grid connection"* will not be provided.

Corkey Windfarm Repowering

Technical Appendix A3.4: Planning Memo – Operational Lifetime

Environmental Statement Addendum No. 3
September 2020

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SCOTTISHPOWER RENEWABLES

Planning Memo: Planning Ref LA01/2010/0890/f Corkey Windfarm Repower Operational Lifespan

1.0 Corkey Repower Windfarm- Application for In-Perpetuity Consent

The planning application does not propose a lifespan for the proposed Development. Section 3.9 of the submitted 'Planning Statement' outlines this position stating:

> ***"3.9 Operational Phase***
> *No time limit on the operational lifespan of the Development has been assumed for the purposes of this assessment. The Operational Corkey Windfarm currently operates in perpetuity without a time limited planning condition. We respectfully request that there is no time limited planning condition restricting the operational life of the Development. This will maintain the current status quo with the operational parameters of the Operational Corkey Windfarm."*

The Environmental Statement is based upon the in-perpetuity position but the ES still considers the decommissioning phase and assesses the worst-case scenario. Refer to section 3.10 of Volume 1 of the submitted ES, which is outlined below:

> ***"3.10 Decommissioning***
> *In the event that the Development requires to be decommissioned, the process would be similar to the decommissioning of the Operational Corkey Windfarm. Given the fewer number of turbines, the potential effects arising from such decommissioning will be less than the effects arising as a result of the combined initial decommissioning and construction phases described above. These phases combined therefore represent the worst-case parameters for assessment purposes."*

2.0 Material Planning Consideration- Planning Policy RE1 of PPS18

Policy RE1 of the PPS 18 links the duration/ lifespan of windfarm planning permission(s) to the expected operational life of the proposed turbines. However, we also note that Policy RE1 does not make recommendation on the actual lifespan, in terms of the number of years.

In this policy context, we highlight that the use of a standard planning condition to require the removal of wind turbines should it become inoperative for a period of more than 12 months (or an extended period of time as other agreed with the planning authority) will serve the same purpose as a time-bound operational lifespan condition, i.e., it will result in the removal of non-operational redundant infrastructure. This could be accompanied by a standard planning condition requiring the submission of a decommissioning plan and site restoration plan. The use of these conditions represents a more sustainable approach to the renewable energy resource at Corkey. Renewable energy is now the sustainable present and future of energy and power production in NI and should be treated as a long-term asset rather than a temporary asset. This should be reflected in the planning conditions.

Removal of the asset in part/or all is then rightly driven by technical requirements and health and safety legislation, matters separate to planning legislation, to determine the appropriate lifespan of the windfarm, rather than an arbitrary period being set in the planning permission, which does not have a sound evidence base. This will enable the proposed Development to produce electricity for as long as possible, without the requirement to seek arbitrary variations to the terms of the Development's planning consent.

We emphasise that adopting the in-perpetuity approach to the life-span of Development does not conflict with the policy provisions of PPS18 RE1. The use of standard planning conditions requiring inoperative turbines (12 months or an extended period of time as otherwise agreed with the planning authority) will ensure that non-operational turbines and associated components will be removed from site, whilst maximising the energy assets at the Corkey windfarm site. Turbine technology continues to improve and with the strategic replacement of key components such as gearboxes, blades, sensors and electricals it is likely that windfarms currently seeking permission could operate well in excess of the previous typical windfarm life-span condition timeframes.

3.0 Material Planning Consideration- 'Fall Back' Position

We highlight that 'fall-back' position in respect of the existing in-perpetuity consent at the site should be afforded significant material weight in consideration of the potential operational lifespan of the proposed Repower Development. The proposed Repower Development does not seek to change the principle of the in-perpetuity consent at the site, rather just the detail of the permitted wind turbine at the site. Planning caselaw has established the following position in respect of the 'fall-back' position;

> *"The prospect of the fall back position does not have to be probable or even have a high chance of occurring; it has to be only more than a merely theoretical prospect. Where the possibility of the fall back position happening is "very slight indeed", or merely "an outside chance", that is sufficient to make the position a material consideration."*[1]

The existing windfarm could continue to operate at the Corkey site in-perpetuity. We consider that the Council should afford significant weight to this position, in addition to other material considerations outlined in this Planning Memo.

4.0 Material Planning Consideration- Statutory Consultee Consultation Responses

We can confirm that statutory consultees have not raised any issue with the principle of the in-perpetuity consent, as applied for under Planning Reference No.LA01/2019/0772/F. The project team has agreed, in consultations with NIEA-NED on 23rd July 2020, that operational planning conditions will be required to ensure that the monitoring of ecological and habitat impacts are mitigated and monitored in-perpetuity, in line with the lifetime of the windfarm. The updated draft Habitat Management Plan (submitted as part of FEI No.3) specifies ongoing operational monitoring regime for the lifetime of the windfarm, that was agreed in principle with NIEA-NED at a meeting on 11th September 2020. Furthermore NIEA-NED, confirmed at a subsequent meeting on 11th September that they were satisfied that an ornithological monitoring regime could be agreed as part of a planning condition. This matter is being addressed in 'Further Environmental Information' submission No.3 which is due to be submitted in early October.

[1] [*2012] EWHC 3708: Zurich Assurance (trading as ThreadNeedle Property Investments) and North Lincolnshire Council & Simons Development Ltd (20th December 2012)*

5.0 Material Planning Consideration UK Precedent- In Perpetuity Windfarm Consents

Clarification was sought by CC&GB on examples of other UK windfarm planning applications permitted with in perpetuity consents. In the past number of years windfarm consents in England have mostly been determined under the Planning Act 2008 in the form of Development Consent Orders ("DCOs"). To date, no DCO has placed any limits on the duration of the operational phase of the windfarms. Examples of recent DCOs granted for renewable energy generation windfarm schemes included;

- Norfolk Boreas
- Norfolk Vanguard
- Hornsea Three
- East Anglia Three
- Triton Knoll

In additional to the windfarm schemes, we cite Cleve Hill Solar Park which also has an in-perpetuity consent. The aforementioned examples, although not Windfarm Repower schemes, highlight that the principle for in in-perpetuity consents for energy generation renewable energy schemes has been established in the UK. In the case of Windfarm Repower projects SPR are seeking to maintain existing in-perpetuity consents at their existing windfarm sites that will be subject to Repowering including (i) Barnesmore windfarm in Co.Donegal, Ireland and (ii) Corkey and Rigged Hill windfarms.

6.0 Conclusion

Having regard to the material planning considerations outlined in section 2.0-5.0 of this Planning Memo we consider that LA01/2019/0772/f should be granted an in-perpetuity consent.

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