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INTRODUCTION

8.1 Atmos Consulting, under the direction of SLR, has been commissioned by the applicant to undertake a review of the Ecological implications that could arise from the relocation of one wind turbine (Turbine No.7) and the realignment of the proposed access track to Turbines No.5 - 11.

8.2 This Supplementary Environmental Information (SEI) Chapter supplements **Chapter 8: Ecology** of the 2022 Kirkton Energy Park Environmental Impact Assessment (EIA) Report. The methodology employed in this SEI is as set out in EIA Report **Chapter 8: Ecology**.

8.3 The following key documents should be read in conjunction with this SEI:

- EIA Report Volume 2 - **Chapter 8: Ecology** (2022);
- EIA Report Volume 3d - Chapter 8 Plan Figures (2022); and
- EIA Report Volume 4a – Chapter 8 Technical Appendices (2022).

CONSULTEE RESPONSES TO 2022 EIA REPORT

8.4 **Table 8-1** below provides a summary of the Ecology related responses to the 2022 Kirkton Energy Park application, received from key consultees. A reply to the consultee responses is also provided in **Table 8-1**.

Table 8-1: Consultee Responses Relating to Non-avian Ecology

Consultee	Area of Concern	Consultee Comment	Comment
The Highland Council (THC) 06/03/23	Proposed Flow Country World Heritage Site – impacts on blanket bog habitat	The direct and indirect loss of blanket bog habitat and its hydrology due to the development would adversely impact the extent and quality of the blanket bog habitat within the WHS, therefore negatively impacting the OUV [Outstanding Universal Value].	Impacts on the Candidate Flow Country World Heritage Site (cWHS) are addressed in the Assessment of Impacts on the Candidate World Heritage Site Report
	Proposed Flow Country World Heritage Site (WHS) – impacts on bird species listed as attributes of the WHS	The International value of the bird species that are listed as attributes of the WHS and form part of its OUV have not been assessed within the EIA. It is considered that the location within and immediately adjacent to the WHS boundary and the scale and type of development would have an adverse impact on the internationally important bird assemblage, including some species being displaced during the construction and operational phases of the development.	Impacts on the Proposed Flow Country World Heritage Site (WHS) are addressed in in the Assessment of Impacts on the Candidate World Heritage Site Report
NatureScot 13/04/23	Caithness and Sutherland Peatlands SAC	In relation to the SAC, our advice is that this proposal is likely to have a significant effect on some SAC habitats (i.e. blanket bog and wet heath) and otter. Consequently, Scottish Government, as competent authority, is required to carry out an appropriate assessment	Noted.

		in view of the site's conservation objectives for its qualifying interests. To help you do this, we advise that on the basis of the information provided, if the proposal is carried out strictly in accordance with the following mitigation, our conclusion is that the proposal will not adversely affect the integrity of the site: • Production and implementation of a specific method statement, as part of the proposed Habitat Management Plan (HMP), for tree felling and peatland restoration works adjacent to the Caithness and Sutherland Peatlands SAC. This should be agreed with NatureScot (and others where appropriate) in advance, prior to commencement of works on site. The agreed methods should be fully implemented for the duration of the works, to safeguard the blanket bog and wet heath features of the SAC. Any follow up works required to ensure success of peatland restoration in this area should also be included as part of this method statement; • Pre-construction surveys for otter to be carried out prior to construction of the wind farm and associated tree felling and peatland restoration works. A Species Protection Plan (SPP) for otter should be produced, where required, which covers all proposed works. Where a SPP for otter is produced, this should be agreed in consultation with NatureScot and the Highland Council prior to works commencing; and • Production of a final Deer Management Plan (DMP), which should be included within the proposed HMP. This should be agreed with NatureScot (and others where appropriate) in advance, prior to works commencing.	
	Protected species	A watching brief should then be implemented by the ECoW during construction. The ECoW should also have a role in amending or drafting any SPPs that are required, using the information from the EIAR and pre-construction surveys, and oversee implementation of the SPPs and any licensing requirements.	Noted.
	Protected species (continued)	We advise that further survey work may be required prior to forest felling and peatland restoration works, particularly if these take place sometime before or after construction of	Noted.

		the wind farm. This is to ensure protected species likely to use this area are safeguarded throughout these works. Provision for further surveys and any proposed mitigation throughout the duration of all works should be detailed within the final HMP/Construction Environmental Management Plan (CEMP), which should be agreed with the Highland Council (in consultation with NatureScot where required) prior to works commencing.	
	Protected species - bats	1. In relation to bats, we recommend any micro-siting allowance agreed still maintains a minimum 50m separation from features suitable for commuting bats (e.g. water courses etc.). 2. We also note from the Protected Mammals report (Technical Appendix 8.3) that adjacent buildings to the proposed turning area A have the potential for roosting bats. The EIAR does not go further to say whether this potential roost site may (or may not) be affected by works and operations in this area. We recommend this is clarified.	1. Noted. 2. To clarify, the buildings adjacent to proposed turning area A will not be affected by the works. There will be no impact on any bat roost (if one existed in the building), and / or on any roosting bat species.
	Forestry	We welcome the Applicant's intention to remove forestry from the adjacent Caithness & Sutherland Peatlands SAC/SPA to address edge effect, which will benefit adjacent SAC habitat and SPA breeding peatland waders (i.e. dunlin and golden plover). We understand the Applicant has also discussed this proposal with Scottish Forestry, including the requirement for compensatory planting. We advise consideration is given to the potential for impacts to protected areas and protected species in relation to such planting. We highlight that where compensatory planting is currently proposed, it could act as a refuge for predators and therefore reduce the effectiveness of the proposed habitat restoration for birds.	Noted.
NatureScot 31/07/23	Peat	We consider the EIA Report (EIAR) has generally made a good assessment of direct impacts, including loss of habitat due to construction. However, the indirect impacts have been assessed on peatland habitats which are within 5m of permanent infrastructure, which appears to be a very small buffer area.	Noted.
	Peat (continued)	1. In addition, the NVC community M19 (*Calluna vulgaris – Eriophorum vaginatum* blanket mire) seems to have been missed within the assessment of impacts to peat and peatland habitat. 2. With reference to Table 8.5 of Chapter 8: Ecology, the total area of M17 and M19	1. Impacts on habitats are assessed on an area including all infrastructure and a buffer of 5m. M19 is not referenced directly as this habitat does not occur within 5m of any

		(including mosaics containing these peatland habitats) appears to be 110.21ha, but this does not include any buffer areas. While there is further detail on the direct and indirect impacts on vegetation communities in the EIAR, it does not include the predicted loss of M19 habitat. The total loss of M17 is 5.44ha, but without further detail on the loss of M19, the final figure of loss to peatland habitat is unclear.	permanent infrastructure, with the exception of where M19 occurs in a mosaic with M15 and the impacts on which are addressed in EIAR Chapter 8, Sections 8.119 – 8.123. Following the amendments to the design (SEI Chapter 8, Section 8.5 refers), updated impacts on habitats are presented in SEI Chapter 8, Sections 8.12 – 8.29, 8.32 and 8.35. 2. Details of the amount of M19 habitat present within the infrastructure buffers (250m from borrow pits or structures requiring foundations, and 100m from all other infrastructure) is presented in Table 8.5 of the EIA Report. Direct and indirect impacts to habitats extend to 5m of permanent infrastructure. When considering direct and indirect impacts, M19 habitat does not occur within the assessment area. Following the amendments to the design (SEI Chapter 8, Section 8.5 refers), updated impacts on habitats are presented in SEI Chapter 8, Sections 8.12 – 8.29, 8.32 and 8.35.
	Peat (continued)	During the habitat surveys undertaken for the proposal, a variety of *Sphagnum* species were found to be present. This included the presence of *Sphagnum austinii*, which is an indicator of near natural bog habitat. It is not known where this species was found in relation to the turbines or associated infrastructure and we understand its location is not available from the vegetation survey information. The presence of this species suggests the condition of blanket bog on site is of high quality. This is further supported by information within the EIAR to suggest these habitats are in good condition.	Noted.
	Peat (continued)	We identified, during our site visit, that the proposal site includes a variety of habitats of	Noted. The design has been amended accordingly (SEI

		varying condition. There are areas on site which are more sensitive to development than others. Such an area is the access track to turbines 5-11 where it crosses an area of deep peat centred around NC88225947. We advise this area is avoided, with access moved to the north or south of this area. In addition, there is an area between turbine 6 and 7 which is of much deeper peat. While this is mainly avoided in the current design, any site micrositing should ensure this area continues to be avoided. Avoiding these 2 areas would reduce the impact on carbon-rich soils, peat and peatland habitat within the proposal site.	Chapter 8, Section 8.5 refers) and impacts on the new design assessed (SEI Chapter 8, Section 8.11 - 8.35 refers).
	Peat (continued)	In addition, we also noted a large number of deer on site and the proposal site exhibited evidence of their impact with large amounts of dung, browsing and trampling, including poaching around pressure points (e.g. fence lines, gates). We advise deer numbers within the site should be managed to reduce their impact and ensure any restoration and offsetting carried out as part of the development is successful.	Noted. EIA Report Technical Appendix (TA) 8.6 refers.
	Peat (continued)	In relation to the Outline Habitat Management Plan (OHMP), we have the following advice: 1. We consider the plan for forest to bog restoration is good and something we would support. As outlined in our response of 13 April 2023, the removal of forestry from this area will benefit the adjacent Caithness and Sutherland Peatlands Special Area of Conservation (SAC). In addition to a specific method statement for these works to safeguard the SAC, we advise that works are carried out with in accordance with the latest guidance. Our Peatland Action team (peatlandaction@nature.scot) can be consulted to provide further advice, if this would be of use to the Developer. 2. The plan also proposes ditch blocking and removal of scrub in the management area. While there is no assessment of the number or length of ditches to be dammed, the techniques appear appropriate for restoration. We advise that any peatland restoration works should be carried out in accordance with the Peatland Action Technical Compendium.T 3. The OHMP states the area of blanket bog (M17, M19 and their mosaics) within the site is 162.64ha, which is not consistent with the	1. Noted. 2. Noted. 3. The figures differ as that stated in EIA Report Chapter 8 is for those areas of habitat within the infrastructure buffers (250m from borrow pits or structures requiring foundations, and 100m from all other infrastructure), and that stated in EIA Report TA 8.6 is for those areas of habitat within the planning application boundary. 4. Noted with reference to the response in point 3 above. 5. Noted.

		figure stated in Chapter 8: Ecology. We therefore recommend this figure is clarified. 4. The area of restoration is stated as 87.25ha. As outlined above, it is unclear what area of habitat will be lost to the development. Once the figure of loss is confirmed, we advise the Developer ensures the ratio of loss to restoration continues to be within the recommended region of 1:10. 5. Furthermore, under National Planning Framework 4 (NPF4), there is a requirement for enhancement which the restoration plan should take into account. Any enhancement would be in addition to the area of restoration proposed.	
Scottish Environment Protection Agency (SEPA) 02/02/23	Groundwater Dependent Terrestrial Ecosystems (GWDTE)	To ensure that Groundwater Dependent Terrestrial Ecosystems (GWDTE) are suitably protected: 1. A single condition requiring either (1) a more detailed qualitative and quantitative assessment to be undertaken to demonstrate to the satisfaction of the planning authority in consultation with SEPA that the W4 and M6 habitats on the track to Turbine 1 and Turbine 2 are not groundwater dependant or (2) a scheme of groundwater monitoring is agreed with the planning authority in consultation with SEPA for those habitats to ensure that the works do not result in a statistically significantly change in the groundwater feeding them, all in line with SEPA guidance on Groundwater Dependant Terrestrial Ecosystems (currently LUPS-GU31). 2. Turbine 7 shall be micro-sited to avoid direct impacts on M6 habitat.	1. Noted. 2. SEI Chapter 8, Section 8.5 details the design change.
	Outline Habitat Management Plan (HMP)	To protect and where possible enhance wetland and peatland and to improve carbon sequestration and natural water management: • Implementation of the Outline Habitat Management Plan so that it provides the enhancement to at least 87 ha of blanket bog. This will help mitigate for the loss of GWDTE.	Noted.

DESIGN AMENDMENTS

8.5 As outlined in **SEI Chapter 3: Description of Development**, the only design amendments from the site layout of the 2022 Kirkton Energy Park application (as detailed in the 2022 EIA Report) is the repositioning of Turbine No.7 (and associated crane pad) approximately 53m north, and the realignment of proposed access track to Turbines No.5 - 11. This relatively minor repositioning of

Turbine T7 has been undertaken in order to accommodate a request from SEPA and move the turbine away from U2 *Deschampsia flexuosa* grassland / M6c *Carex echinata – Sphagnum fallax / denticulatum* mire.

8.6 The minor route changes to the proposed access track to Turbines No.5 - 11 has been undertaken to accommodate a request from NatureScot to avoid impacts on areas of deep peat.

REVISED FIGURES

Figures

8.7 In order to update the graphic information previously issued with the 2022 EIA Report, a series of revised Figures have been produced for the SEI, as follows:

- Figures which support **SEI Chapter 8: Ecology**:
  - **SEI Figure 8.2: Infrastructure Buffers - Phase 1 Habitat Survey Results**;
  - **SEI Figure 8.3: Infrastructure Buffers - NVC Survey Results**;
- Figures which support **Technical Appendix 8.1** of the EIA Report:
  - **SEI Figure 8.1.3: Phase 1 Habitat Survey Results**;
  - **SEI Figure 8.1.4: NVC Survey Results**;
- Figures which support **Technical Appendix 8.2** of the EIA Report:
  - **SEI Figure 8.2.2: Bat Detectors and Site Layout Iterations**;
  - **SEI Figure 8.2.3a: Bat Activity Survey Results Spring**;
  - **SEI Figure 8.2.3b: Bat Activity Survey Results Summer**;
  - **SEI Figure 8.2.3c: Bat Activity Survey Results Autumn**;
- Figures which support **Technical Appendix 8.4** of the EIA Report:
  - **SEI Figure 8.4.1: Fish Habitat Survey Results**;
- Figures which support **Technical Appendix 8.5** of the EIA Report
  - **SEI Figure 8.5.2: Phase 1 Habitat Survey Results**; and
  - **SEI Figure 8.5.3: NVC Survey Results**.

BASELINE CONDITIONS

Habitats

8.8 As a result of the design amendments (Section 8.5), the Infrastructure Buffers have changed and the resulting amendments presented on **SEI Figures 8.2** and **8.3**. Phase 1 habitats and NVC communities recorded as present within the Infrastructure Buffers are listed, together with their extent, in **Table 8-2** and **Table 8-3** respectively.

Table 8-2: Phase 1 Habitats Recorded Within Infrastructure Buffers

Phase 1 Habitat	Extent (ha) within Infrastructure Buffers (% of total)
Semi-improved acid grassland	0.40 (0.14)
Blanket *Sphagnum* bog	97.93 (34.15)
Continuous bracken *Pteridium aquilinum*	6.70 (2.33)
Broad-leaved plantation woodland	3.05 (1.06)
Semi-natural broad-leaved woodland	2.85 (0.99)
Coniferous plantation woodland	19.39 (6.76)
Acid dry dwarf shrub heath	6.41 (2.24)
Flush and spring – acid / neutral flush	3.48 (1.21)
Improved grassland	13.29 (4.63)
Marsh / marshy grassland	28.15 (9.82)
Scattered broad-leaved trees	1.33 (0.465)
Gorse *Ulex europaeus* scrub	0.50 (0.17)
Wet dwarf shrub heath	51.79 (18.06)
Mosaics	
Semi-improved acid grassland / continuous bracken	2.03 (0.71)
Semi-improved acid grassland / flush and spring – acid/neutral flush	13.84 (4.83)
Semi-improved acid grassland / wet dwarf shrub heath	6.40 (2.23)
Acid dry dwarf shrub heath / continuous bracken	2.40 (0.84)
Flush and spring – acid/neutral flush / acid dry dwarf shrub heath / continuous bracken	3.15 (1.10)
Marsh/marshy grassland / semi-improved acid grassland	4.77 (1.66)
Marsh/marshy grassland / wet dwarf shrub heath	4.65 (1.62)
Marsh/marshy grassland / continuous bracken	0.65 (0.23)
Marsh/marshy grassland / improved grassland	1.06 (0.37)
Wet dwarf shrub heath / blanket *Sphagnum* bog	3.47 (1.21)
Wet dwarf shrub heath / acid dry dwarf shrub heath	1.54 (0.54)
Wet dwarf shrub heath / marsh/marshy grassland	7.53 (2.63)
Total	**286.79 (100)**

Table 8-3: NVC Communities Recorded Within Infrastructure Buffers

NVC Community	Extent (ha) within Infrastructure Buffers (% of total)
Discrete stands of classifiable NVC communities	
M6 *Carex echinata – Sphagnum fallax / denticulatum* mire, sub-community a	0.48 (0.17)
M6 *Carex echinata – Sphagnum fallax / denticulatum* mire, sub-community c	0.33 (0.12)
M15 *Trichophorum germanicum – Erica tetralix* wet heath	23.00 (8.02)
M15 *Trichophorum germanicum – Erica tetralix* wet heath, sub-community b	5.36 (1.87)
M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire	3.13 (1.09)
M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire, sub-community b	38.68 (13.49)

NVC Community	Extent (ha) within Infrastructure Buffers (% of total)
M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire	2.98 (1.04)
M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire, sub-community a	6.75 (2.35)
M23 *Juncus effusus / acutiflorus – Galium palustre* rush pasture	0.48 (0.17)
MG6 *Lolium perenne – Cynosurus cristatus* grassland	1.06 (0.37)
U2 *Deschampsia flexuosa* grassland	0.40 (0.14)
U20 *Pteridium aquilinum – Galium saxatile* community	3.96 (1.38)
U20 *Pteridium aquilinum – Galium saxatile* community, sub-community a	2.74 (0.95)
W4 *Betula pubescens – Molinia caerulea* woodland	2.85 (0.99)
W4 *Betula pubescens – Molinia caerulea* woodland, sub-community c	0.92 (0.32)
W17 *Quercus petraea – Betula pubescens – Dicranum majus* woodland	3.25 (1.13)
W23 *Ulex europaeus – Rubus fruticosus* scrub	0.50 (0.17)
Mosaics	
H10 *Calluna vulgaris – Erica cinerea* heath with planted broad-leaved trees	3.95 (1.38)
H10 *Calluna vulgaris – Erica cinerea* heath, sub-community a with planted broad-leaved trees	2.46 (0.86)
H10 *Calluna vulgaris – Erica cinerea* heath / U20 *Pteridium aquilinum – Galium saxatile* community	2.40 (0.84)
M6 *Carex echinata – Sphagnum fallax / denticulatum* mire, mosaic of sub-communities a and b / U4 *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland / H10 *Calluna vulgaris – Erica cinerea* heath	2.67 (0.93)
M6 *Carex echinata – Sphagnum fallax / denticulatum* mire, sub-community c / H10 *Calluna vulgaris – Erica cinerea* heath / U20 *Pteridium aquilinum – Galium saxatile* community	3.15 (1.10)
M15 *Trichophorum germanicum – Erica tetralix* wet heath / *Juncus* pasture	12.19 (4.25)
M15 *Trichophorum germanicum – Erica tetralix* wet heath / H10 *Calluna vulgaris – Erica cinerea* heath	1.54 (0.54)
M15 *Trichophorum germanicum – Erica tetralix* wet heath / U4 *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland	12.31 (4.29)
M15 *Trichophorum germanicum – Erica tetralix* wet heath / M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire	3.71 (1.29)
M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire, mosaic of sub-communities a and b	57.27 (19.97)
M23 *Juncus effusus / acutiflorus – Galium palustre* rush-pasture / U20 *Pteridium aquilinum – Galium saxatile* community	0.65 (0.23)
M28 *Iris pseudacorus – Filipendula ulmaria* mire / U20 *Pteridium aquilinum – Galium saxatile* community	0.89 (0.31)

NVC Community	Extent (ha) within Infrastructure Buffers (% of total)
U2 *Deschampsia flexuosa* grassland / M6 *Carex echinata – Sphagnum fallax / denticulatum* mire, sub-community c	13.84 (4.83)
U2 *Deschampsia flexuosa* grassland / M15 *Trichophorum germanicum – Erica tetralix* wet heath	6.40 (2.23)
U2 *Deschampsia flexuosa* grassland / U20 *Pteridium aquilinum – Galium saxatile* community	2.03 (0.71)
U4 *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland / *Juncus* pasture	3.88 (1.35)
Unclassified habitat	
Improved grassland	11.69 (4.07)
Juncus pasture	27.68 (9.65)
Low woodland	1.40 (0.48)
Mixed woodland	1.33 (0.46)
Coniferous plantation woodland	16.89 (5.89)
Pasture	1.60 (0.6)
Total	**286.79 (100)**

8.9 **Table 8-4** shows the potential groundwater dependence (from SEPA, 2017) and nature conservation status for NVC categories identified (or Phase 1 habitats where NVC categorisation is absent) within the Infrastructure Buffers.

Table 8-4: Potential Groundwater Dependence and Nature Conservation Designations of Phase 1 Habitats / NVC communities within the Infrastructure Buffers

Phase 1 Habitat / NVC Community	Potential Groundwater Dependence	Nature Conservation Status
H10 *Calluna vulgaris – Erica cinerea* heath	None	European dry heaths (Annex 1) Alpine and Boreal heaths (Annex 1) Upland heathland (SBL)
M6 *Carex echinata – Sphagnum fallax / denticulatum* mire	High	Upland flushes, fens and swamps (SBL)
M15 *Trichophorum germanicum – Erica tetralix* wet heath	Moderate (dependent on the hydrogeological setting)	Northern Atlantic wet heaths with Erica tetralix (Annex 1) Alpine and boreal heaths (Annex 1) Degraded raised bogs still capable of natural regeneration (Annex 1) Blanket bogs (Annex 1) Blanket bog (SBL) Upland flushes, fens and swamps (SBL) Upland heathland (SBL)
M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire	None	Blanket bogs (Annex 1) Depressions on peat substrates of the *Rhynchosporion* (Annex 1) Blanket bog (SBL) Upland heathland (SBL)
M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire	None	Active raised bogs (Annex 1) Blanket bogs (Annex 1) Depressions on peat substrates of the *Rhynchosporion* (Annex 1) Blanket bog (SBL)

Phase 1 Habitat / NVC Community	Potential Groundwater Dependence	Nature Conservation Status
		Upland heathland (SBL)
M23 *Juncus effusus / acutiflorus – Galium palustre* rush-pasture	High	Purple moor-grass and rush pastures (SBL) Upland flushes, fens and swamps (SBL)
M28 *Iris pseudacorus – Filipendula ulmaria* mire	Moderate (dependent on the hydrogeological setting)	Blanket bog (SBL) Upland flushes, fens and swamps (SBL)
U2 *Deschampsia flexuosa* grassland	None	Upland flushes, fens and swamps (SBL) Upland heathland (SBL) *Juncus squarrosus – Festuca ovina* grassland (SBL) *Nardus stricta – Galium saxatile* grassland (SBL)
U4 *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland	None	Species-rich *Nardus* grassland on siliceous substrates in mountain areas (Annex 1) Upland heathland (SBL) *Juncus squarrosus – Festuca ovina* grassland (SBL) *Nardus stricta – Galium saxatile* grassland (SBL)
U20 *Pteridium aquilinum – Galium saxatile* community	None	
MG6 *Lolium perenne – Cynosurus cristatus* grassland	None	
W4 *Betula pubescens / Molinia caerulea* woodland	High	Caledonian forest (Annex 1) Bog woodland (Annex 1) Upland birchwoods (SBL) Wet woodland (SBL)
W17 *Quercus petraea – Betula pubescens – Dicranum majus* woodland	None	Old sessile oakwoods (Annex 1) Caledonian forest (Annex 1) Upland birchwoods (SBL) Wet woodland (SBL)
W23 *Ulex europaeus – Rubus fruticosus* scrub	None	
Coniferous plantation woodland	None	
Deciduous low woodland	None	
Mixed woodland	None	
Improved grassland	None	
Juncus pasture	None	Purple moor-grass and rush pastures (SBL)

Definitions

Annex 1 - Annex 1 of the Habitats Directive (92/43/EEC)

SBL - Scottish Biodiversity List

8.10 **Table 8-5** shows the value given for each habitat identified within the Infrastructure Buffers. Wherever possible, the NVC categories have been used as the basis of the evaluation because they more directly relate to SEPA (2017) GWDTE classification as well as Annex 1 and SBL habitat categories.

Table 8-5: Evaluation of Habitats / NVC Communities within the Infrastructure Buffers

Phase 1 Habitat / NVC Community	Reason for Evaluation	Evaluation
H10 *Calluna vulgaris – Erica cinerea* heath	Listed on the SBL, with floristic variations listed on Annex 1. Low level of cover within the Infrastructure Buffers in mosaic with planted deciduous trees, U20, M15, M6 and U4, and M6 and U20 at 5.65%.	Less than local
M6 *Carex echinata – Sphagnum fallax / denticulatum* mire	Listed on the SBL. Very low level of cover within the Infrastructure Buffers as a discrete stand (0.29%). Also present in mosaic with U4 and H10, H10 and U20, and U2 equating to 6.86%. High potential for groundwater dependence.	Local
M15 *Trichophorum germanicum – Erica tetralix* wet heath	Listed on the SBL, with floristic variations listed on Annex 1. Moderate level of cover within the Infrastructure Buffers as a discrete stand at 9.89%, with additional coverage as a mosaic with Juncus pasture, H10, U4, M19, and U2 (12.60%). Moderate potential for groundwater dependence.	Local
M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire	Listed on the SBL, with floristic variations listed on Annex 1. Moderate level of cover within Infrastructure Buffers at 34.55%.	Local
M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire	Listed on the SBL, with floristic variations listed on Annex 1. Low level of cover within Infrastructure Buffers as a discrete stand (3.39%), and in mosaic with M15 (1.29%).	Less than local
M23 *Juncus effusus / acutiflorus – Galium palustre* rush-pasture	Listed on the SBL. Very low level of cover within the Infrastructure Buffers as a discrete stand (0.17%), and in mosaic with U20 (0.23%). High potential for groundwater dependence.	Less than local
M28 *Iris pseudacorus – Filipendula ulmaria* mire	Listed on the SBL. Very low level of cover within the Infrastructure Buffers in mosaic with U20 at 0.31%. Moderate potential for groundwater dependence.	Less than local
U2 *Deschampsia flexuosa* grassland	Listed on the SBL. Very low level of cover within the Infrastructure Buffers as a discrete stand (0.14%), and in mosaic with M15, M6, and U20 (7.77%).	Less than local
U4 *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland	Listed on the SBL. Low level of cover within the Infrastructure Buffers in mosaic with *Juncus* pasture, M15, and M6 and H10 (6.57%).	Less than local
U20 *Pteridium aquilinum – Galium saxatile* community	Low level of cover within the Infrastructure Buffers as a discrete stand (2.40%), and in mosaic with H10, M23, M28, M6 and H10, and U2 (3.19%).	Less than local
MG6 *Lolium perenne – Cynosurus cristatus* grassland	Very low level of cover within the Infrastructure Buffers at 0.37%.	Less than local
W4 *Betula pubescens / Molinia caerulea* woodland	Listed on the SBL, with floristic variations listed on Annex 1. Very low level of cover within the Infrastructure Buffers as a discrete stand (1.31%). High potential for groundwater dependence.	Less than local
W17 *Quercus petraea – Betula pubescens – Dicranum majus* woodland	Listed on the SBL, with floristic variations listed on Annex 1. Very low level of cover within the Infrastructure Buffers at 1.13%.	Less than local
W23 *Ulex europaeus – Rubus fruticosus* scrub	Very low level of cover within the Infrastructure Buffers at 0.17%.	Less than local
Coniferous plantation woodland	Low level of cover within the Infrastructure Buffers at 5.89%.	Less than local
Deciduous low woodland	Very low level of cover within the Infrastructure Buffers at 0.48%.	Less than local

Phase 1 Habitat / NVC Community	Reason for Evaluation	Evaluation
Mixed woodland	Very low level of cover within the Infrastructure Buffers at 0.46%.	Less than local
Improved grassland	Low level of cover within the Infrastructure Buffers at 4.07%.	Less than local
Juncus pasture	Listed on the SBL. Moderate level of cover within Infrastructure Buffers as a discrete stand (9.65%), and in mosaic with M15 and U4 (5.60%).	Less than local

IDENTIFICATION AND EVALUATION OF KEY IMPACTS

8.11 The methodology of the ecological impact assessment is described in full in the EIA Report **Chapter 8: Ecology** and will be replicated to fully assess the ecological impacts of the design amendments.

Assessment of Construction Phase Impacts

Habitats

8.12 EIA Report **Chapter 3: Description of Development** includes the proposed dimensions of all permanent and temporary features of the proposed development. Permanent features of the proposed development consist of turbines, turbine foundations, crane hardstandings, access tracks, an abnormal load turning area, and substation / battery compound. Temporary features of the proposed development consist of the construction compound and borrow pit(s).

8.13 The impacts are categorised as follows:

- direct habitat loss: this includes habitats present under the footprint of the proposed development, including access tracks, turbine bases, crane hardstandings, substation, compound and borrow pit(s).
- indirect habitat disturbance: this has only been calculated for peatland habitats which lie within 5m of the permanent infrastructure. The allowance of 5m is to account for degradation due to drainage and cable laying, and is considered likely to produce a conservative estimate for habitat loss as drainage effects will depend on topology, so not all areas included are likely to be affected.

8.14 The total area of mire (M6 *Carex echinata – Sphagnum fallax / denticulatum* mire), wet dwarf shrub heath (M15 *Trichophorum germanicum – Erica tetralix* wet heath) and blanket bog (M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire), habitats assessed as having local or greater value within the Infrastructure Buffers, amounts to approximately 184.06ha (64.19%). This includes 19.66ha (6.86%) of M6 *Carex echinata – Sphagnum fallax / denticulatum* mire which is in mosaic with U4 *Festuca ovina – Agrostis capillaris – Galium saxatile* grassland and H10 *Calluna vulgaris – Erica cinerea* heath, H10 heath and U20 *Pteridium aquilinum – Galium saxatile* community, and U2 *Deschampsia flexuosa* grassland; and 36.15ha (12.6%) of M15 *Trichophorum germanicum – Erica tetralix* wet heath which is in mosaic with *Juncus* pasture, H10 heath, U4 grassland, M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire, and U2 grassland; and 57.27ha (19.97%) of M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire, sub-communities a and b.

M6 *Carex echinata – Sphagnum fallax / denticulatum* mire

8.15 A total of 20.47ha of M6 vegetation communities (including sub-communities) are present within the Infrastructure Buffers, representing 7.15% cover. Almost all of this total (19.66ha) is made up of M6 communities which are in mosaic with U4 grassland and H10 dry heath, H 10 dry heath and U20 community, and U2 grassland, and so this should be regarded as a worst case scenario.

8.16 A total of 0.27ha (0.12ha of M6a-b / U4 / H10 mosaic and 0.15ha of U2 / M6c mosaic) will be permanently lost to the proposed development. The loss of 0.09% M6 communities (0.04% M6a-b / U4 / H10 mosaic and 0.05% U2 / M6c mosaic within the Infrastructure Buffers leaves 99.91% of this vegetation community (either as a discrete stand and / or in mosaic) still present in the Infrastructure Buffers following construction.

8.17 Ecological effects on M6 communities as a result of direct impacts associated with construction activities are considered to be **non-significant**. Confidence in this prediction is near certain.

8.18 A total of 0.55ha M6 communities (0.24ha of M6a-b / U4 / H10 mosaic and 0.31ha of U2 / M6c mosaic) are present within 5m of permanent infrastructure, representing 0.19% of the total within the Infrastructure Buffers. Therefore, there is potential for indirect impacts and temporary loss associated with the construction zones around infrastructure. With the mitigation measures detailed in the EIA Report, **Chapter 8,** Sections 8.100 – 8.108 including the requirement for ECoW and the requirement for pollution control during construction (to be taken forward within the proposed development CEMP) along with measures detailed within the PMP (EIA Report **Technical Appendix 10.2**), effects on M6 vegetation communities as a result of indirect impacts will not result in loss of structure and function.

8.19 Ecological effects on M6 communities as a result of indirect impacts associated with construction activities are considered to be **non-significant**. Confidence in this prediction is near certain.

M15 *Trichophorum germanicum – Erica tetralix* wet heath

8.20 A total of 64.51ha of M15 vegetation communities (including sub-communities) are present within the Infrastructure Buffers, representing 22.49% cover. Over half of this total (36.15ha) is made up of M15 communities which are in mosaic with *Juncus* pasture, H10 dry heath, U4 grassland, M19 blanket mire, and U2 grassland communities and so this should be regarded as a worst-case scenario.

8.21 A total of 4.53ha (0.92ha of M15 / *Juncus* pasture, M15 / U4, M15 – M19, and U2 / M15 mosaics, and 3.61ha of discrete M15) will be permanently lost to the proposed development. The loss of 1.58% M15 communities (0.32% *Juncus* pasture / M15, M15 / U4, M15 – M19, and U2 / M15 mosaics, and 1.26% discrete M15) within the Infrastructure Buffers leaves 98.42% of this vegetation community still present in the Infrastructure Buffers following construction.

8.22 Ecological effects on M15 communities as a result of direct impacts associated with construction activities are considered to be **non-significant**. Confidence in this prediction is near certain.

8.23 A total of 3.41ha M15 communities (1.66ha of discrete M15, and 1.75ha in mosaic with *Juncus* pasture, U4 grassland, M19 blanket mire, and U2 grassland) are present within 5m of permanent infrastructure, representing 1.19% of the total within the Infrastructure Buffers. Therefore, there

is potential for indirect impacts and temporary loss associated with the construction zones around infrastructure. With the mitigation measures detailed in the **EIA Report, Chapter 8, Sections 8.100 – 8.108** including the requirement for ECoW and the requirement for pollution control during construction (to be taken forward within the proposed development CEMP) along with measures detailed within the PMP (**EIA Technical Appendix 10.2**), effects on M6 vegetation communities as a result of indirect impacts will not result in loss of structure and function.

8.24 Ecological effects on M15 communities as a result of indirect impacts associated with construction activities are considered to be **non-significant**. Confidence in this prediction is near certain.

M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire

8.25 A total of 99.08ha of M17 vegetation communities (including sub-communities) are present within the Infrastructure Buffers, representing 34.55% cover.

8.26 A total of 3.34ha of M17 vegetation communities will be permanently lost to the proposed development. The loss of 1.16% M17 communities within the Infrastructure Buffers leaves 98.84% of this vegetation community still present in the Infrastructure Buffers following construction.

8.27 Ecological effects on M17 communities as a result of direct impacts associated with construction activities are considered to be **non-significant**. Confidence in this prediction is near certain.

8.28 A total of 2.34ha M17 communities are present within 5m of permanent infrastructure, representing 0.81% of the total within the Infrastructure Buffers. Therefore, there is potential for indirect impacts and temporary loss associated with the construction zones around infrastructure. With the mitigation measures detailed in the EIA Report, **Chapter 8, Sections 8.100 – 8.108** including the requirement for ECoW and the requirement for pollution control during construction (to be taken forward within the proposed development CEMP) along with measures detailed within the PMP (EIA Report **Technical Appendix 10.2**), effects on M6 vegetation communities as a result of indirect impacts will not result in loss of structure and function.

8.29 Ecological effects on M17 communities as a result of indirect impacts associated with construction activities are considered to be **non-significant**. Confidence in this prediction is near certain.

Fauna

8.30 Effects during the construction phase on protected fauna (considered to be otter *Lutra lutra* and common pipistrelle *Pipistrellus pipistrellus*) will not change as a result of the amendments to the design. Both direct and indirect impacts on these species are considered to be **non-significant**.

Designated Sites

8.31 Effects during the construction phase on designated sites (considered to be Caithness and Sutherland Peatlands Special Area of Conservation (SAC) / Ramsar, West Halladale Site of Special Scientific Interest (SSSI), East Halladale SSSI, Strathy Coast SSSI and Red Point Coast SSSI) will not change as a result of the amendments to the design. Both direct and indirect impacts on these sites are considered to be **non-significant**.

Assessment of Operational Phase Impacts

Habitats

8.32 Effects during the operational phase on habitats will not change as a result of the amendments to the design. **No significant effects** are predicted. Confidence in this prediction is near certain.

Fauna

8.33 Effects during the operational phase on protected fauna (considered to be otter and common pipistrelle) will not change as a result of the amendments to the design. **No significant effects** are predicted. Confidence in this prediction is near certain.

Designated Sites

8.34 Effects during the operational phase on qualifying features of the designated sites will not change as a result of the amendments to the design. **No significant effects** are predicted. Confidence in this prediction is near certain.

Assessment of Decommission Phase Impacts

8.35 Effects during the decommissioning phase on habitats, fauna and qualifying features of designated sites will not change as a result of the amendments to the design. **No significant effects** (either beneficial or adverse) are predicted.

Amendments to Outline Habitat Management Plan

8.36 In their response, RSPB noted the omission of detail with regards predator control in the HMP area (as presented in **Technical Appendix 8.5: Outline Habitat Management Plan** of the EIA Report). Predator control will be considered with the requirement determined by the results of post-felling, post construction surveys.

8.37 In their response, NatureScot state the importance of undertaking pre-felling surveys and to undertake felling operations at the correct time of year to ensure protected species likely to use this area are safeguarded throughout the proposed works. This is noted and accepted.

SUMMARY OF CHANGES TO THE SIGNIFICANCE OF EFFECTS

8.38 As a result of the changes to the proposed development there would be no changes to the effects as assessed and presented in **Chapter 8: Ecology** of the EIA Report.

CONCLUSIONS

8.39 This chapter has reviewed the responses from consultees, providing additional information as requested where necessary and clarifying a number of concerns.

8.40 It has reviewed the changes to the layout of the proposed development and described how these would have no change on the assessment of the effects of the proposed development on ecological receptors.