8. Technical Appendix 8.8: Habitat Regulations Appraisal

8.1 Introduction

8.1.1 The Proposed Development has potential connectivity with the River Oykel Special Area of Conservation (SAC) and Caithness & Sutherland Peatlands SAC/Ramsar. As a result, in addition to the ecological impact assessment detailed in **Chapter 8: Ecology**, there is a requirement for the completion of a Habitats Regulations Appraisal (HRA). Ornithology related assessment with respect to European sites is provided in **Chapter 9: Ornithology**.

8.1.2 This Technical Appendix provides the information required for the Competent Authority to establish whether or not the construction, operation and decommissioning of the Proposed Development would be likely to have Adverse Effects on Site Integrity[1] (AESI) of these European sites in view of best scientific knowledge and with regards to the conservation objectives of the European sites, specifically the species for which the sites were designated and the habitats upon which they depend.

8.2 Habitat Regulations Appraisal Context

8.2.1 Under the Conservation of Habitats and Species Regulations 2017 which apply in Scotland[2] in relation to certain specific activities (reserved matters), including consents granted under Section 36 of the Electricity Act 1989 (The Habitats Regulations), all competent authorities must consider whether any plan or project will have a 'likely significant effect' (LSE) on a European site. In Scotland, European Sites are defined as candidate Special Areas of Conservation (cSACs), designated Special Areas of Conservation (SACs) and classified Special Protection Areas (SPAs); these sites are given legal protection by the Habitats Regulations.

8.2.2 The Habitats Regulations ensure that any plan or project that may damage a European site is assessed and can only go ahead if certain strict conditions are met, via an HRA.

8.2.3 If required, the competent authority must carry out an 'Appropriate Assessment' (AA) to decide whether there is enough evidence to conclude that the proposals will not have any AESI. The methodology followed in this report has had regard to guidance provided in Scottish Natural Heritage (now NatureScot) (2018)[3].

8.2.4 Regulation 48 of the Habitats Regulations indicates a number of steps to be taken by the competent authority before granting consent to a project. In order of application, the first four steps of the HRA process are:

i. Step 1 - Consider whether the project is directly connected to or necessary for the management of the designated site (Regulation 48 (1b));

ii. Step 2 - Consider whether the project, alone or in combination, is likely to have a significant effect on the designated site (Regulation 48 (1a)); if so,

[1] In this case is taken to be the "coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is designated".

[2] https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/
Following the EU exit, policy on the protections and standards afforded by the Habitats Regulations remains unchanged, but there have been some changes in terminology and the Scottish Ministers now exercise some functions that were previously carried out at an EU level.

[3] https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra/habitats-regulations-appraisal-hra

iii. Step 3 - Make an AA of the implications for the designated site in view of that designated site's conservation objectives (Regulation 48 (1)).

iv. Step 4 - Consider whether it can be ascertained that the proposal would not adversely affect the integrity of the designated site ('Integrity Test') having regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given (Regulation 48 (5 & 6)).

8.3 Screening for Likely Significant Effects

8.3.1 Step 1 seeks to determine whether or not the plan or project is directly connected or necessary for the management of a European site.

8.3.2 The proposed development is a 'project', for the purpose of the Habitats Regulations, but is not directly connected with or necessary for the management of any European site. An appropriate assessment may, therefore, still be required and so it is necessary to proceed to Step 2 of the Screening Process.

8.3.3 Step 2 comprises an assessment of the likely significant effects on European sites in relation to the Proposed Development.

8.3.4 A summary of European site information for both sites is provided in Table 8.8.1. Conservation status of qualifying features is based on data sourced from NatureScot Sitelink, April 2021).

8.3.5 Part of HRA screening involves establishing the likely 'Zone of Influence' (ZoI) of the Development. The ZoI will vary depending on the nature of the project as well as the character and ecology of the qualifying features. For floral and habitat features, given their fixed nature, potential effects are likely to be limited to those associated with direct impacts, such as construction related habitat loss and pollution on habitats, on, directly adjacent, or with direct connectivity to the Site, for example hydrologically. In light of this, it is considered that the ZoI should be limited to land with the potential to be directly affected by the Proposed Development and therefore the ZoI is limited to within 2 km of the Site boundary.

8.3.6 The three European sites which fall within the ZoI of the Proposed Development are the Caithness and Sutherland Peatlands SAC and Ramsar, which are part of the same boundary, and the River Oykel SAC. As a result, where 'likely significant effects' on these sites cannot be ruled out in the context of an HRA, they have been scoped into Step 3 of the HRA process. An HRA Screening Assessment for all qualifying features is presented in Table 8.8.2.

Table 8.8.1: European Site Information

European site	Qualifying features	Conservation objectives	Condition of features	Negative pressures
River Oykel SAC[4]	Qualifying Species: Atlantic salmon Freshwater pearl mussel	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species, including range of genetic types for salmon, as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species • Distribution and viability of freshwater pearl mussel host species • Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species	Atlantic salmon - Favourable Recovered (July 2011); Freshwater pearl mussel - Unfavourable No change (April 2015)	Agricultural operations Forestry operations Water management Water quality Game/ fisheries management Wildlife crime
Caithness & Sutherland Peatlands SAC[5]	Qualifying Habitats: Acid peat-stained lakes and ponds Blanket bog Clear-water lakes or lochs with aquatic vegetation and poor to	To avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitats that the following are maintained in the long term: • Extent of the habitat on site • Distribution of the habitat within site	Blanket bog – Unfavourable, No change (June 2017); Depressions on peat substrates – Unfavourable, No change (June 2017); Acid peat-stained lakes and ponds – Favourable maintained (August 2004);	Burning Game/fisheries management Invasive species Trampling

[4] https://sitelink.nature.scot/site/8363 [Accessed April 22, 2021]
[5] https://sitelink.nature.scot/site/8218 [Accessed April 22. 2021]

European site	Qualifying features	Conservation objectives	Condition of features	Negative pressures
	moderate nutrient levels Depressions on peat substrates of the Rhyncosporion Very wet 'quaking' mires Wet heathland with cross-leaved heath	• Structure and function of the habitat • Processes supporting the habitat • Distribution of typical species of the habitat • Viability of typical species as components of the habitat • No significant disturbance of typical species of the habitat	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels – Unfavourable declining (August 2015); Wet heathland with cross-leaved heath – Unfavourable no change (June 2017); Very wet mires often identified by an unstable 'quaking' surface – Favourable declining (2017);	
	Qualifying Species: Marsh saxifrage Otter	To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species	Marsh saxifrage – Favourable maintained (June 2017); Otter – Unfavourabe declining (September 2011)	Forestry operations Natural events No negative pressures associated with marsh saxifrage.
Grudie Peatlands SSSI [component of Caithness & Sutherland Peatlands SAC]	Blanket bog	• To maintain the condition, extent and distribution of the peatland habitats. • To increase breeding bird populations and avoid significant disturbance to birds during the breeding season. [Ornithology is considered in Chapter 9] • To maintain suitable otter habitat across the site and avoid activities that might disturb otters.	Blanket bog - Favourable, maintained (June 2002) Otter (See SAC above)	Egg collecting Woodland expansion.

Table 8.8.2: HRA Screening Assessment

European site	Qualifying features	Screening rationale	Likely Significant Effect/ Further Consideration?
River Oykel SAC	Atlantic salmon	Neither species was recorded within the Site, however the River Cassley, which forms part of the River Oykel catchment, is situated approximately 1.5km south-west of the Site boundary. Watercourses that intersect the Site drain downgradient into the River Cassley, and may provide potential for hydrological connectivity with the SAC. Proposed Development within likely ZoI.	**Yes / Screened in**
	Freshwater pearl mussel		**Yes / Screened in**
Caithness & Sutherland Peatlands SAC/Ramsar	Blanket bog	Blanket bog and wet heath habitat are both widepsread across the Site, although they do not share hydrological connectivity with the blanket bog and wet heath habitats within the SAC/Ramsar. however they may be subject to displacement of deer and associated impacts. Proposed Development within likely ZoI.	**Yes / Screened in**
Caithness & Sutherland Peatlands SAC	Wet heathland with cross-leaved heath		**Yes / Screened in**
	Depressions on peat substrates of the Rhyncosporion	The feature can associated with some habitats and NVC communities recorded (M2 mosaic with M17[6]) however were it was not recorded during surveys, and no connectivity with this feature within the SAC is predicted. Proposed Development outwith Potential ZoI.	**No / Screened out**
	Very wet 'quaking' mires	The associated core NVC types for transition mire and quaking bog (M4, M5, M8, M9 and S27)[7] were not recorded within the Study Area, and no connectivity with this features within the SAC is predicted. Proposed Development outwith Potential ZoI.	**No / Screened out**
	Clear-water lochs	None of these features were recorded within the Study Area and no hydrological connectivity with features (including Loch Sgeireach and Loch an Rasal which are in a different catchment) within the SAC are predicted. Proposed Development outwith likely ZoI.	**No / Screened out**
	Acid peat-stained lakes and ponds		**No / Screened out**
	Marsh saxifrage		**No / Screened out**
	Otter	Otter was recorded within the Site and its associated watercourses. Otter can utilise home ranges of up to 32 km, it is considered likely that otter utilising the Site comprise part of the Caithness and Sutherlands SAC population. Proposed Development within likely ZoI.	**Yes / Screened in**

[6] https://sac.jncc.gov.uk/habitat/H7150/
[7] https://sac.jncc.gov.uk/habitat/H7140/

8.3.1 As summarised above, likely significant effects could not be ruled out for blanket bog, wet heathland with cross-leaved heath, otter, Atlantic salmon and freshwater pearl mussel. All other qualifying features have been scoped out of further assessment; therefore, only the aforementioned features have been scoped into the AA.

8.3.2 Although an AA must be carried out by a relevant competent authority, information to inform the AA has been provided in below.

8.4 Information to Inform Appropriate Assessment

8.4.1 The following section provides information for the competent authority to be able to conclude No AESI for the River Oykel SAC and Caithness & Sutherland Peatlands SAC as a consequence of the Proposed Development.

8.4.2 Several qualifying features associated with the River Oykel SAC and Caithness & Sutherland Peatlands SAC/Ramsar have the potential to be sensitive to activities undertaken during the construction, operational and decommissioning phases of the Proposed Development; with the potential to result in significant adverse effects to the integrity, conservation objectives or qualifying species of these sites.

8.4.3 Baseline conditions as determined through field surveys and a desk study for the EIA are presented in further detail in the **EIA Report Chapter 8: Ecology** and **Technical Appendices 8.1 – 8.10**.

Potential Impacts on Qualifying Features

8.4.4 As identified within EIA Report, **Chapter 8: Ecology**, the following identified potential impacts on SAC qualifying features are outlined in Table 8.8.3.

Table 8.8.3: Potential impacts to SAC qualifying features

European site	Qualifying feature	Development phase	Identified potential impacts
River Oykel SAC	Atlantic salmon and Freshwater pearl mussel	Construction/ Decommissioning	Silt/Sediment and Pollutant Release to Watercourses
Caithness & Sutherland Peatlands SAC/Ramsar	Blanket bog Wet heathland with cross-leaved heath		Reduction in habitat quality as a result of hydrological connectivity and pollution incidents
			Degradation of plant communities resulting from displacement of local deer population
	Otter		Habitat loss
			Disturbance/ displacement
			Temporary severance of otter habitat and commuting routes
			Injury / direct mortality
		All Phases	Reduction in habitat quality as a result of Pollution Incidents

River Oykel SAC [Atlantic salmon and Freshwater pearl mussel]

Construction and Decommissioning Effects

Silt/Sediment and Pollutant Release to Watercourses

8.4.5 In light of the NatureScot survey data (**Technical Appendix 8.5**) there is no evidence that the Proposed Development poses a significant threat to any pearl mussel populations. In addition to which, Atlantic salmon were found to be absent from the Site based on the lack of connectivity (due to barriers) between the watercourses within the catchment.

8.4.6 However, water from all the development site watercourses ultimately ends up flowing into the important downstream River Cassley catchment. On this basis, the Allt an Rasail / River Cassley catchments are all considered to be 'sensitive' in construction method statements prepared in support of the CEMP.

8.4.7 Seven points were confirmed as 'natural watercourses' and represent the watercourse crossing points of the Proposed Development.

- Two watercourse crossings will span relatively large watercourses across the Allt Bad an t-Sagairt, and across the Allt an Ràsail. SEPA guidance typically requires that single span structures be designed where feasible, especially for larger watercourse crossing widths where a bridge design would typically be considered more appropriate.
- At the remaining five watercourse crossing locations, it has been assumed that the proposed watercourse crossings could constitute culverts with construction on the bed or banks of the watercourses only.

8.4.8 Works to install these water crossings have the potential to generate sediment runoff and pollution discharge which could impact the River Oykel SAC features - freshwater pearl mussel or salmon either through direct toxicity of changes to supporting habitats, for instance the siltation of gravels.

8.4.9 Freshwater pearl mussels live buried or partly buried in the beds of clean, fast-flowing unpolluted streams and rivers and subsist by inhaling and filtering for the minute organic particles on which they feed (Cosgrove *et al*. 2000). Of specific importance to freshwater pearl mussel survival are levels of silt, suspended solids, calcium and chemical compounds generally associated with enrichment i.e. nitrate, phosphate and biological oxygen demand (Bauer, 1983). Consequently, pearl mussels are very sensitive (more than salmonids) to pollution and water quality.

8.4.10 In the absence of good practice mitigation, works during construction could lead to a sudden pulse of pollutant, which, if not readily controlled, might enter the aquatic environment and ultimately flow downstream into the River Oykel SAC. Therefore, any pollution incident from the Site has the potential to impact on at least part of the downstream River Oykel SAC pearl mussel population. The following measures as outlined in **Chapter 10: Hydrology and Hydrogeology** have been incorporated in order to ensure that water quality within the Site is maintained and the risk of sedimentation and/or pollution are controlled or reduced wherever possible:

- To comply with the Controlled Activities Regulations (CAR) it is anticipated that a Construction Site Licence (CSL) would be required. The application for a CSL would be supported by a Pollution Prevention Plan (PPP) and Pollution Incident Response Plan (PIRP) which would be subject to consultation with SEPA in advance of any

construction activities. This would set out site management and working practices and draw heavily upon SEPA's Guidance for Pollution Prevention (GPPs);

- All watercourse crossings would be designed in accordance with the SEPA Good Practice Guide for the Construction of River Crossings (2010). Where culverts are required, these would be designed in accordance with the CIRIA Culvert Design and Operation Guide (2010);
- Specially designed silt traps would be used to reduce potential impacts of sedimentation on downstream aquatic habitats; and
- A construction area stand-off of at least 50m radius has been applied to all watercourses (except for watercourse crossings). The layout has been designed to minimise the number of crossings.

8.4.11 Taking into account standard guidance and best practice pollution prevention measures (outlined in **Chapter 10: Hydrology and Hydrogeology** and the draft CEMP (**Technical Appendix 3.1**)), it is considered very unlikely that a serious pollution incident would occur during construction.

8.4.12 The magnitude of a pollution event from the site on the downstream internationally important River Oykel SAC is assessed as High if it occurs, causing significant effects. However, embedded mitigation including the draft CEMP and PPP will set out how suitable pollution prevention measures will be adopted to prevent pollution of the River Oykel SAC. The ECoW will also have an important role in ensuring compliance and implementation of all work plans. This mitigation is embedded within the design process and, assuming that the measures are implemented correctly, it can be reasonably concluded that there will be no significant adverse effect to the qualifying species of the SAC due to potential hydrological impact pathways during construction or decommissioning.

Operation Effects

8.4.13 The operational phase is not anticipated to involve any works which will directly or indirectly impact water courses within the River Oykel catchment. The potential risks to surface water during operation are likely to be limited and localised based on the planned turbine servicing works and the nature and volume of potentially polluting substances required. The operator would ensure a site-specific risk assessment is completed and that control measures are implemented to ensure all environmental risks are minimised. Storage, use and disposal of oils would be in accordance with good practice and SEPA guidance. Assuming that these measures are implemented correctly, it can therefore be reasonably concluded that the there is no significant adverse effect to the qualifying species of the SAC during the operational phase.

Summary of Effects for River Oykel SAC [Atlantic salmon and freshwater pearl mussel]

8.4.1 A summary assessment in the context of the River Oykel SAC conservation objectives is provided in Table 8.8.4.

Caithness & Sutherland Peatlands SAC/Ramsar [Blanket bog and Wet heath within Grudie Peatlands SSSI component]

Construction and Decommissioning Effects

Reduction in habitat quality as a result of hydrological connectivity and pollution incidents

8.4.2 No land-take will occur in the SAC/Ramsar/SSSI site, so no direct habitat loss will occur.

8.4.1 The Grudie Peatlands SSSI component of the SAC is situated approximately 30m to the north east of the nearest access track and 45m to the north east of the nearest construction area of a turbine (T18). No land-take will occur in the SAC/Ramsar/SSSI site and no indirect habitat loss would be anticipated given that all construction and operational work will take place downslope in the Cassley catchment and not over the section of the catchment where the SAC/Ramsar SSSI sites are located.

8.4.2 Provided embedded mitigation in the form of construction method statements prepared in support of the CEMP are implemented (See Section 8.5), and given that all construction work will occur in the River Cassley catchment, potential indirect impacts, such as upslope changes in hydrology and drainage will not affect blanket bog and wet heath habitats within the Grudie Peatlands SSSI component of the SAC.

8.4.3 On this basis, it can be reasonably concluded that there will be no significant adverse effect to the qualifying blanket bog and wet heath habitats within the SAC due to potential hydrological or pollution impact pathways.

Degradation of plant communities resulting from displacement of local deer population

8.4.1 As there are potentially high densities of deer within the Glencassley Estate (See **Technical Appendix 8.9**) and the Proposed Development site, there is a chance that displaced deer could move into adjacent blanket bog associated with Caithness & Sutherland SAC [within the Grudie Peatlands SSSI] which borders the eastern site boundary, which could be adversely impacted by increased deer trampling pressures.

8.4.2 No construction activities would occur within the boundary of the SAC, but access track, and a turbine and hardstanding area are located 50m and 93m from the SAC, respectively, at their closest points.

8.4.3 The construction phase for the Proposed Development is anticipated to last for approximately 18 months. During this period, deer that would generally utilise habitats within the site would be expected to be displaced as a result of construction activities, which could contribute to increased grazing/trampling pressure on adjacent SSSI habitats to the north-east of the Proposed Development. However, continuous disturbance would not be expected from all locations at all times and different activities are likely to have different levels of disturbance dependent on a range of factors including the type of activity, topography of the land or line of sight. It is anticipated that deer would be most likely be displaced a couple of hundred metres away from personnel and any active construction works and would be expected to return to the construction area once activities have ceased.

8.4.4 Deer have some basic requirements, which can be summarised simply as food and shelter. So long as these are provided then deer are relatively predictable in terms of their needs. If a wind farm is developed in a manner that prevents deer from gaining access to

traditional sources of food or shelter, then deer are likely to move elsewhere in search of these resources.

8.4.5 Glencassley Estate actively manage the red deer population in collaboration with the wider East Sutherland DMG and therefore have knowledge of where the deer seek food and shelter throughout the year. **Technical Appendix 8.9** details the population of red deer utilising the main site and wider Study Area. The following summarises their habits and general distribution.

8.4.6 Deer tend to move into and out of the hill, spending evenings and night down in the fields around the River Cassley, before moving up into the hill (within the site) through the day. In addition to which, there is very little lateral movement of deer up and down the glen (See Figure 8.9.2 – Deer Management Plan – Technical Appendix 8.9).

8.4.7 In broad terms, heavier grazing and trampling are generally found along the routes in and out of the hill rather than widespread in nature across the Estate. Within the Estate, the biggest concentration of deer are generally found between Badintagairt and the woodland around Glencassley Castle where the best quality grassland is found. [Pers. Comm. Mark White, Glenassley Estate Gamekeeper]. Due to the lack of lateral movements up and down the glen, and habitual nature of their movement in and out of the hill, tied to their preferred grazing fields in the valley bottom, the deer within the estate are considered to form discrete units that can be managed in a targeted way.

8.4.8 Practical experience from SSE development sites elsewhere suggests that localised temporary displacement of deer can sometimes occur around construction sites whilst work commences, dependent upon how habituated or scared of humans the deer are. However, the Proposed Development will not prevent deer gaining access to favoured sources of food or shelter detailed in Section 8.4.6 above. Consequently, there is no evidence to suggest that deer behaviour will change in the long-term if the Proposed Development is built.

8.4.9 In conclusion, whilst there is some weak anecdotal evidence (See **Technical Appendix 8.9**) that construction work may cause very localised and temporary displacement of red deer, however, this ceases when construction activities end. In addition to which, based on a proposed phased approach to construction (See **Chapter 3: Description of Development**), working areas would be localised rather than comprising the entirety of the Proposed Development area, further limiting the potential for wider dispersal. There is no evidence that large scale construction projects in the uplands affect deer movements and behaviour in the short, medium or long-term. Therefore, there is no evidence to suggest the Proposed Development is likely to cause any substantial or significant changes in deer movements and behaviour on Glencassley or adjacent estates.

8.4.10 In light of this, potential deer displacement effects during construction on the blanket bog and wet heath features of the SAC would be considered temporary and of a low magnitude. On this basis, it can be reasonably concluded that there will be no significant adverse effect to the qualifying blanket bog and wet heath habitats within the SAC due to potential deer displacement during construction and decommissioning.

Operation Effects

8.4.11 Maintenance of the Proposed Development is likely to result in occasional vehicle movements and personnel presence throughout the operation of the Proposed Development; however, this activity will be sporadic and over short periods. Due to the infrequency and localised nature of these activities, the potential detrimental effect from

displaced deer on the Caithness and Sutherland Peatlands/SAC or Grudie Peatlands SSSI would be considered negligible and therefore no significant adverse effect to the qualifying features of the SAC would be anticipated during the operational phase.

Summary of Effects for Caithness and Sutherland Peatlands SAC [Blanket bog and wet heath features]

8.4.12 A summary assessment in the context of the Caithness and Sutherland Peatlands SAC conservation objectives is provided in Table 8.8.4.

Caithness & Sutherland Peatlands SAC [Otter]

Construction and Decommissioning Effects

Habitat loss

8.4.13 The SAC is situated adjacent to the Proposed Development and there will be no change in the extent habitat supporting otter in the SAC. A total of three resting places (two couches and one holt) and three potential resting places (one potential couch and two potential holts) were recorded within the Study Area. The nearest resting site was on the Allt an Rasail, approximately 225m from the nearest construction area. As such, the magnitude of impact with respect to the loss of suitable resting sites is negligible.

Disturbance and displacement

8.4.14 During the construction phase there are potential impacts that may result from the occurrence of ground works in close proximity to watercourses used by otter. These include the detrimental impacts of disturbance and displacement from suitable otter habitats, indirect impact of reducing habitat suitability for prey species, thus reducing prey availability, or by directly damaging habitats used to otter for resting and commuting. These effects could also contribute to the reduction of connectivity to the wider local area, and a minor reduction of fitness in members of the otter population, due to decreased resources and the subsequent increase in competition for resources.

8.4.15 Given the distance from the nearest working areas, no otter resting sites within the site study area or SAC would be affected.

8.4.16 The presence of the most well-used otter travel routes (primarily the Allt an Rasail and Allt Bad an t-Sagairt) were identified within the site and the location of these and resting sites were taken into account when designing the Proposed Development, to avoid potential disturbance of these features wherever possible. This included:

- The number of watercourse crossings (2 bridge crossings and 5 culverted crossings) was kept to a minimum to reduce the risk of disturbance to and pollution of watercourses;
- All turbines and associated infrastructure have been located wherever possible a minimum 50m from watercourses; and
- All construction works areas have avoided recorded resting sites. The nearest resting site was recorded approximately 225m from the nearest construction area.

8.4.17 Due to the extent of available watercourses/waterbodies and the extensive foraging and commuting habitat within the Study Area that will remain undisturbed during construction and decommissioning, the availability of foraging habitat resource is not considered to be a limiting factor within the site. In light of this and the embedded

mitigation measures (See Section 8.5), disturbance/displacement effects to otters during both construction and decommissioning phases within the site would therefore be temporary and sporadic, and the magnitude of change would be low.

Temporary severance of otter habitat and commuting routes

8.4.18 There is also potential for construction activities to cause fragmentation of otter habitat and prevent the free movement of otters across their territories.

8.4.19 Access tracks have avoided crossing watercourses where possible, but due to the number of watercourses on the site, and limitations regarding access locations, it is not possible for the development to take place without some being crossed. The Proposed Development includes 2 bridge crossings and 5 culverted crossings.

8.4.20 Whilst otters are likely to utilise most watercourses within the site, otter territories are likely to cover many kilometres of watercourses/water bodies, between River Cassley and Loch Shin, much of which would be largely unaffected. Furthermore, the Proposed Development is likely to represent only a very small proportion of an otter's foraging territory, with alternative routes available including overland routes, and as such, works would not be expected to result in permanent blockage of existing commuting routes.

8.4.21 On this basis, and in light of the embedded mitigation (See Section 8.5), including the implementation of culverts fitted with mammal ledges to allow free access the temporary loss or barrier effects during the construction of watercourse crossings would result in a low magnitude of change to the SAC otter population.

Injury and Direct mortality

8.4.22 With the adoption of embedded mitigation (See Section 8.5), the risk of direct mortality to individuals during the construction and decommissioning phases is low and would result in a low magnitude of change to the SAC otter population.

Pollution

8.4.23 The site layout has been designed wherever possible to avoid sensitive otter features including resting sites and paths alongside water courses and their riparian zones. With the adoption of the embedded mitigation (See Section 8.5), degradation of food resource by pollution of habitats used by otter, during all phases of the Proposed Development is considered to be neutral. The overall magnitude of change to the otter population is also considered neutral.

<u>Operational Effects</u>

8.4.24 Development maintenance is likely to result in occasional vehicle movements and personnel presence throughout the operation phase; however, this activity will be limited to access tracks and wind turbine generators, with no disturbance of the surrounding environment (including riparian habitats) expected. Due to the infrequency and localised nature of operational activities, and the low value and use of the Site by otter the potential detrimental effect is considered to be of negligible magnitude.

<u>Summary of Effects for Caithness and Sutherland Peatlands SAC otter</u>

8.4.25 A summary assessment in the context of the Caithness and Peatlands SAC conservation objectives is provided in Table 8.8.4.

8.5 Mitigation and Good Practice Measures

Deer Management Plan

8.5.1 A Deer Management Plan (DMP) has been prepared and is provided in **Technical Appendix 8.9**. The management plan provides detailed measures on the management of deer numbers to help minimise potential trampling and grazing damage to blanket bog habitat identified for habitat management proposals off-site (as detailed in the oHMP – **Technical Appendix 8.10**). This management plan has been prepared with consideration of the existing East Sub-Group Deer Management Plan (ESG DMP). The DMP also includes habitat condition monitoring which would result in amendments to the DMP as necessary.

8.5.2 The measures outlined in the DMP would be expected to provide ecological benefits by contributing to a reduction in trampling and grazing pressures on peatland habitats within the Study Area.

Construction Environmental Management Plan (CEMP)

8.5.3 A CEMP would be developed to provide a framework for the management of environmental impacts including those on ecological features such as the River Oykel SAC. A draft CEMP is provided in **Technical Appendix 3.1** and would be developed by the Applicant, the contractor and a suitably qualified Ecological or Environmental Clerk of Works (ECoW) as the detailed design for the Proposed Development is established. Standard mitigation and pollution prevention measures and good practice, as described in the CEMP, would be implemented during the construction and decommissioning work to ensure the integrity of the River Oykel SAC as well as the Caithness & Sutherland Peatlands SAC (with respect to otter) are not affected by pollution, siltation or dust. The methods of working outlined in the CEMP to protect the SAC are as follows:

- To comply with the Controlled Activities Regulations (CAR) it is anticipated that a Construction Site Licence (CSL) would be required. The application for a CSL would be supported by a Pollution Prevention Plan (PPP) and Pollution Incident Response Plan (PIRP) which would be subject to consultation with SEPA in advance of any construction activities. This would set out site management and working practices and draw heavily upon SEPA's Guidance for Pollution Prevention (GPPs);
- All watercourse crossings would be designed in accordance with the SEPA Good Practice Guide for the Construction of River Crossings (2010). Where culverts are required, these would be designed in accordance with the CIRIA Culvert Design and Operation Guide (2010);
- Specially designed silt traps would be used to reduce potential impacts of sedimentation on downstream aquatic habitats.
- A construction area stand-off of at least 50m radius would be applied to all watercourses (except for watercourse crossings).
- Fuel deliveries and refuelling would be undertaken by trained staff in a designated bunded area with an impermeable base. All fuel-related activities would take place more than 50m away from the SAC and any watercourse, unless previously agreed with the ECoW;
- All reasonable steps would be taken to prevent sediment runoff or other matter disturbed by the construction work. Where possible, works would be undertaken during drier periods and avoid periods of high rainfall. Where a high level of dust is

produced from vehicle movements on access tracks, the tracks would be sprayed with water to minimise dust formation; and

- Spill kits would be available on all plant on the site as well as at any pollution sources and sensitive features.

8.5.4 The CEMP would also include a Species Protection Plans (SPP) for otter, which would be prepared to ensure compliance with legislation. These would include details of pre-construction surveys to check on the presence of otters and a suite of embedded mitigation that would be implemented across the site to avoid causing harm to, or disturbing this species:

- During normal working hours throughout the construction period the ECoW would be on-site to ensure that all environmental measures relevant to otter and water vole are delivered and ensure compliance with legislation.
- Avoid working or artificial lighting within 50m of watercourses/ waterbodies during the hours of darkness, taken to be 30 minutes before sunset to 30 minutes after sunrise.
- All works in proximity to waterbodies / watercourses would follow measures outlined in the CEMP/ PPP to ensure their complete protection against pollution, silting and erosion;
- Culverts would be fitted with mammal ledges;
- Strict speed limits (15mph) would be followed on access tracks during all phases of development;
- Trenches, holes and pits would be kept covered at night or provide a means of escape for otters (and other fauna) that may become entrapped. Gates to compound areas would be designed sensitively to prevent mammals from gaining access and would be closed at night. Any temporarily exposed pipes would be capped when contractors are off-site to prevent otter from gaining access;
- Any lighting used to accommodate such works must be positioned to minimise light spill onto watercourses/ waterbodies; and
- An emergency procedure would be implemented by site workers if an otter is encountered. All works within 30m would cease as soon as it is safe to do so, and the ECoW would inspect the site and define appropriate measures (if required).

8.6 In Combination Effects

8.6.1 The above sections have considered the effects of the Proposed Development in isolation from other developments. A cumulative assessment was prepared within the EIA Report (**Chapter 8: Ecology**), which comprises all developments within the spatial area within a 10km radius of the Proposed Development including wind farms (consented or in planning). As outlined in Table 8.8.2 (HRA Screening), consideration has been given as to whether any of the qualifying interest features of the European sites taken forward for further assessment are likely to be subject to cumulative effects because of the effects generated by other developments.

8.6.2 This in combination assessment comprises all developments within the spatial area within a 10km radius of the Proposed Development including wind farms (consented or in planning). In total, three wind farm developments are included in the assessment as listed in Table 8.8.4.

Table 8.8.4: Developments considered for 'In combination' Assessment

Wind farm site	Approximate Distance from the Proposed Development (km)	Status	Number (and tip height) of Proposed Turbine	Important Ecological Features	Predicted Residual Impacts on Important Ecological Features (IEFs)
Braemore	5km	Consented	18 turbines 126m	Caithness and Sutherland Peatlands SAC (Otter)	During the construction phase of the development, no residual impacts were predicted that are significant at a local level or higher. During operation and decomissioning phases, no impacts were predicted for all IEFs.
Sallachy	9.5km	Scoping/ Screening	9 turbines 149.9m	Caithness and Sutherland Peatlands SAC (Otter, Blanket bog)	With the implementation of proposed mitigation measures, no likely significant residual adverse effects were predicted for any IEFs.
Meall Buidhe	9.5km	Application/ Appeal	9 turbines 149.5m	River Oykel SAC (Atlantic slamon and Freshwater pearl mussel)	During construction, operation and decomissioning phases, no more than negligible effects were predicted for all IEFs.

Caithness & Sutherland Peatlands SAC/Ramsar [Blanket bog]

8.6.3 The ecology chapters submitted as part of the application for Braemore and Meall Buidhe wind farms do not identify any impact pathways to the Caithness and Sutherland Peatlands SAC (habitat features).

8.6.4 The ecology chapter submitted for the Sallachy Wind Farm identified none or negligible adverse impacts to qualifying habitats. However, planned restoration proposals were outlined as part of a proposed oHMP, which would involve restoring blanket bog in an area ca. 200Ha within the Study Area which is ca. ten times greater than the predicted habitat loss and a further 270Ha of peatland restoration within the Grudie Peatlands (SSSI and component part of the SAC and Ramsar site). The oHMP also identified deer management as a key objective, reducing grazing pressure across the peatland habitats for a sustained period of time which would also have benefits for the Caithness and Sutherland Peatlands SAC and Ramsar).

8.6.5 Subject to the delivery of proposed habitat management/restoration proposals, the cumulative effect on Caithness and Sutherland Peatlands SAC/Ramsar/SSSI (all notified for their blanket bog interest) when considered in-combination with Sallachy Wind Farm is therefore considered to be negligible (with potentially net beneficial outcomes) and consequently, no likely in combination effects are predicted.

Caithness & Sutherland Peatlands SAC/Ramsar [Otter]

8.6.6 Otter was recorded within each wind farm site and given that otters are highly mobile and can readily commute over 9.5km (the separation distance between the furthest of the three sites) may be considered to contribute to the SAC population. However, given the separation distance between each wind farm and the Caithness and Sutherland

Peatlands SAC, and the fact that the construction phase of the Proposed Development would be unlikely to coincide with construction phases of the three wind farms, the in combination disturbance of individual otters associated with the Caithness & Sutherland Peatlands SAC would be not significant at all phases of the development.

River Oykel SAC [Atlantic salmon and Freshwater pearl mussel]

8.6.7 Atlantic salmon and freshwater pearl mussel were not recorded within the Sallachy site and no hydrological connectivity was identified, being 1.6 km away and located in a different catchment (Loch Shin catchment).

8.6.8 At Meall Buidhe, in the absence of mitigation, it was considered likely that contaminated surface-water run-off could enter the River Oykel and its main tributaries. Given the separation distance from these water features and the turbine envelope, it was considered that potential effects from the construction phase of the Proposed Development would be Low/Medium. However, best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment; runoff and sediment control measures; and an Emergency Response Plan; and a Freshwater pearl mussel Species Protection Plan and Pollution Protection Plan. With the implementation of the mitigation and best practice measures outlined above, residual effects on the features of the SAC were considered to be Negligible and Not Significant.

8.6.9 No detail could be ascertained from the Braemore ES chapter, due to extensive redaction of content; however no residual impacts were predicted.

8.6.1 Subject to the delivery of embedded mitigation proposals, the in combination effect on River Oykel SAC (Atlantic salmon and freshwater pearl mussel features) when considered in-combination with Meall Buidhe Wind Farm is therefore considered to be negligible (with potentially net beneficial outcomes) and consequently, no likely in combination effects are predicted.

8.7 Summary of Residual Effects in relation to Conservation Objectives

8.7.1 Table 8.8.5 presents a summary of potential effects to European sites in relation to Site Conservation Objectives.

Table 8.8.5: Summary of Effects of the Proposed Development on European Site Conservation Objectives.

European site	Conservation Objective	Consideration of Effects based on impact pathways identified in Section 8.4	Are Conservation Objectives or Status compromised by the Proposed Development?	Predicted Adverse Effects on Site Integrity?
River Oykel SAC	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.	There will be no change to the extent or distribution of the habitat in the River Oykel SAC as there is no land-take within the River Oykel SAC. Embedded mitigation including a construction area stand-off of at least 50m radius has been applied to all watercourses (except for watercourse crossings). The production of a draft CEMP and PPP will set out how suitable pollution prevention measures will be adopted to prevent pollution of the River Oykel SAC. Site management and working practices will draw heavily upon SEPA's Guidance for Pollution Prevention (GPPs). All watercourse crossings would be designed in accordance with the SEPA Good Practice Guide for the Construction of River Crossings (2010). Where culverts are required, these would be designed in accordance with the CIRIA Culvert Design and Operation Guide (2010). On this basis, the integrity of the site will not be adversely altered by the Proposed Development.	**No**	**None**
	To ensure for the qualifying species that the following are maintained in the long term: • Population of the species, including range of genetic types for salmon, as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species	There will be no change in the population or distribution of Atlantic salmon or Freshwater pearl mussel in the SAC. There will be no change in the extent of habitat supporting Atlantic salmon or Freshwater pearl mussel in the SAC. There will be no change in the structure, function and process (such as competition and population dynamics, prey abundance) to habitat supporting Atlantic salmon or Freshwater pearl mussel in the SAC. There will be no significant disturbance to Atlantic salmon or Freshwater pearl mussel in the SAC.	**No**	**None**

European site	Conservation Objective	Consideration of Effects based on impact pathways identified in Section 8.4	Are Conservation Objectives or Status compromised by the Proposed Development?	Predicted Adverse Effects on Site Integrity?
	• No significant disturbance of the species • Distribution and viability of freshwater pearl mussel host species • Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species	On this basis, the favourable conservation status of both species will be maintained.		
Caithness & Sutherland Peatlands SAC [Grudie Peatlands SSSI]	To avoid deterioration of the qualifying habitats (see Table 8.8.1) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.	There will be no change to the extent or distribution of the qualifying habitat in the Caithness and Sutherland SAC as there is no land-take within the Caithness and Sutherland SAC. The integrity of the site will not be adversely altered by the Proposed Development (e.g. no hydrological pathway as the SAC is in a different catchment; and displacement of deer is considered to be of a low magnitude and not significant).	**No**	**None**
	To ensure for the qualifying habitats that the following are maintained in the long term: • extent of the habitat on site; • distribution of the habitat within site; • structure and function of the habitat; • processes supporting the habitat; • distribution of typical species of the habitat; • viability of typical species as components of the habitat; and • no significant disturbance of typical species of the habitat.	There will be no change in the extent of the habitats on the SAC from the Proposed Development. There will be no change in the distribution of the habitats within the SAC from the Proposed Development. The structure and function (e.g. vegetation dynamics such as competition, ecosystem properties such as connectivity or population dynamics) of the habitats in the SAC will not be altered from the Proposed Development. No pathways for disruption of the structure and function of the SAC have been identified. The process supporting the habitats in the SAC will not be altered by the Proposed Development. No pathways for disruption to ecological process (e.g. colonisation, nutrient cycling) has been identified. The distribution of the typical species of the qualifying habitats in the SAC will not be altered from the Proposed Development.	**No**	**None**

European site	Conservation Objective	Consideration of Effects based on impact pathways identified in Section 8.4	Are Conservation Objectives or Status compromised by the Proposed Development?	Predicted Adverse Effects on Site Integrity?
		There will be no disturbance to the typical species of the habitat within the SAC. Therefore, the conservation status of the SAC qualifying habitats will be maintained.		
	To avoid deterioration of the habitats of the qualifying species (otter and marsh saxifrage) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.	There will be no deterioration of the habitat of the qualifying species in the Caithness and Sutherland SAC as there is no land-take the Caithness and Sutherland SAC and no hydrological or pollution pathways. The integrity of the site will not be altered by the Proposed Development (e.g. no hydrological pathway as in a different catchment).	**No**	**None**
	To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site; • Distribution of the species within site; • Distribution and extent of habitats supporting the species; • Structure, function and supporting processes of habitats supporting the species; and • No significant disturbance of the species.	There will be no change in the population or distribution of otter in the SAC. There will be no change in the extent habitat supporting otter in the SAC. There will be no change in the structure, function and process (such as competition and population dynamics, prey abundance) supporting habitat supporting otter in the SAC. There will be no significant disturbance to otter in the SAC. The impact to otters within the SAC as a consequence of potential disturbance from construction and operation of the Proposed Development is considered to be of a low magnitude, intermittent and short-term for construction and operation and no likely significant effects are predicted.	**No**	**None**

8.8 Conclusions

8.8.1 This document has considered the potential for impacts arising from the construction and operation of the Proposed Development that would have the potential to adversely affect River Oykel SAC and Caithness & Sutherland Peatlands SAC/Ramsar/SSSI with regard to their qualifying features and conservation objectives.

8.8.2 The assessment set out in this report ascertains that the Proposed Development would have no adverse effect upon the integrity of River Oykel SAC or the conservation objectives relating to both Atlantic salmon and freshwater pearl mussel, either individually or in combination with other plans and projects, subject to the implementation of standard pollution prevention measures detailed in a site-specific CEMP in order to avoid pollution from entering the River Oykel SAC.

8.8.3 The assessment has also shown that likely significant effects to blanket bog and wet heath habitats within the Grudie Peatlands SSSI component of the Caithness & Sutherland Peatlands SAC/Ramsar/SSSI would be of low magnitude, temporary and not significant. On this basis, there will be no AESI and the Site's conservation objectives would be maintained.

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