

APPENDIX 5 – KIRKTON GRID CONNECTION: COMPARATIVE APPRAISAL OF ALIGNMENT OPTIONS

Table 1 below summarises environmental constraints for the Alignment Options, and an environmental alignment preference.

Table 1: Environmental Constraints

Category	Sub-Topic	Summary of Constraints for Alignment Option 1	Summary of Constraints for Alignment Option 2	Alignment Preference
Natural Heritage	Designations	<p>Alignment Option 1 does not overlap with any designated sites but runs in close proximity to the Caithness and Sutherland Peatlands Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site, and the West Halladale Site of Special Scientific Interest (SSSI), which is a component of the SAC/SPA. The qualifying features of the designated sites include 12 upland breeding bird species, marsh saxifrage, otter, freshwater habitats and numerous upland habitats, including blanket bogs, which are considered to be particularly sensitive to water quality. Alignment Option 1 lies approximately 1.1 km from these designated sites.</p> <p>To the north of Alignment Option 1 lies Strathy Point SAC (approx. 7.6 km), Strathy Coast SSSI (approx. 2.8 km) and North Caithness Cliffs SPA (approx. 3.9 km). However, there is not considered to be any pathway for connectivity with these designated sites.</p> <p>Alignment Option 1 is located in close proximity (c.100 m west) to the Allt na h-Eaglaise. This watercourse has hydrological connectivity with the Caithness and Sutherland Peatlands SAC, SPA</p>	<p>As per Alignment Option 1, Alignment Option 2 lies approximately 1.1 km from the Caithness and Sutherland Peatlands SAC, SPA and Ramsar site and the West Halladale SSSI, and is a similar distance to the designations located to the north of the alignment.</p> <p>Although Alignment Option 2 is located slightly closer to the Allt na h-Eaglaise, potential impacts on designated sites and mitigation measures during construction will be the same for both alignment options.</p>	Both alignment options are located a similar distance from the designated sites and as a result, both options are considered broadly comparable with no optimal alignment option.

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		<p>and Ramsar site and West Halladale SSSI, although it flows away from these sites. Given the separation distance and the fact that the Alignment Option is downstream from the designations, it is unlikely that there would be any indirect effects on these sites due to run-off and pollution from construction works, even in the absence of mitigation.</p> <p>With regards to non-avian ecological features associated with these designated sites, Alignment Option 1 is unlikely to affect these, with habitats present not functionally linked to designated sites, although otters from the SAC could make use of the Allt na h-Eaglaise and its tributaries for foraging, commuting and potentially sheltering or breeding. Additionally, golden plover, which is a qualifying avian feature of the designations has been recorded during recent surveys, with a single breeding territory identified in 2022. Some other SPA species could also make use of the habitat along and surrounding Alignment Option 1 for breeding and/or foraging, although it is highly unlikely to represent an important foraging area.</p> <p>Standard good practice mitigation measures would be required during construction to avoid and reduce potential effects on the qualifying interests of the surrounding designated sites,</p>		

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		<p>particularly otter and SPA breeding bird populations.</p>		
	Protected Species	<p>Recent protected species surveys were carried out in the wider area during 2022 and 2023. No signs of pine marten or wildcat were recorded. There was limited suitable habitat for these species in the area. No signs of badger were recorded within 200 m of Alignment Option 1. The closest badger sett that was recorded was approximately 270 m away. Low levels of activity by common pipistrelle bats were recorded in proximity to the alignment option.</p> <p>Signs of otter were observed along the Allt na h-Eaglaise watercourse. Numerous otter spraint and five couches were noted along with an area of suitable habitat for water vole within 200 m of the alignment option.</p> <p>Standard good practice mitigation would be required during construction to avoid and reduce potential direct effects on terrestrial protected species, such as otter and water vole, including accidental mortality or injury, damage or destruction of habitat features, and/or disturbance. Similarly, standard good practice measures during construction would be required to avoid the potential for indirect effects such as pollution of watercourses, which could adversely affect otter and water vole foraging and breeding habitat.</p>	<p>Surveys and species were as per Alignment Option 1.</p> <p>Although Alignment Option 2 is located slightly closer to the Allt na h-Eaglaise, potential impacts on the qualifying features of designated sites and mitigation measures to avoid and reduce potential indirect and direct effects on terrestrial protected species during construction would be the same for both alignment options.</p>	<p>Both alignment options are located a similar distance to the Allt na h-Eaglaise. Given this both options are considered broadly comparable with no optimal alignment option.</p>

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	Habitats	<p>Habitats along Alignment Option 1 are typical of the wider landscape and predominantly comprise of improved grassland, with a small section of acid/neutral flush and the existing access track. Acid/neutral flush has high potential to support Groundwater-dependent Terrestrial Ecosystems (GWDTEs).</p> <p>Alignment Option 1 lies within 200 m of the Allt na h-Eaglaise watercourse.</p>	<p>The habitats crossed by Alignment Option 2 comprise improved and semi-improved grassland and acid neutral flush.</p> <p>As per Alignment Option 1, Alignment Option 2 lies within 200 m of the Allt na h-Eaglaise watercourse.</p>	<p>Alignment Option 1 is considered optimal to Alignment Option 2 as the habitats it passes through are likely to be of lower ecological importance. A large section of Alignment Option 1 is located along an existing access track, and it crosses a smaller extent of acid/neutral flush (which has high potential to support GWDTEs). This alignment option is also located further from the surrounding watercourses.</p>
	Biodiversity	<p>Alignment Option 1 passes through low value habitats such as the existing access track, improved grassland and a small section of acid neutral flush.</p> <p>The existing access track and bare ground is classed as 'Very Low Distinctiveness' habitat on the BNG scale. Improved grassland is classified as 'Low Distinctiveness' and Acid neutral flush is classed as 'Very High Distinctiveness'.</p>	<p>Alignment Option 2 is located in closer proximity to the Allt na h-Eaglaise watercourse and passes through larger areas of acid neutral flush, poor semi-improved grassland and improved grassland compared with Alignment Option 1.</p> <p>As per Alignment Option 1, Alignment Option 2 is considered to be of low habitat value, although (as per Alignment Option 1) the acid neutral flush habitat that it crosses has the potential to support GWDTEs.</p>	<p>Alignment Option 1 is considered the optimal option as it passes through a smaller portion of acid neutral flush (rated as very high distinctiveness on the BNG scale) and areas of lower quality habitat than Alignment Option. It also lies slightly further from the Allt na h-Eaglaise watercourse.</p>
	Ornithology	<p>Ornithological surveys were carried out in the wider surrounding area between late 2018 to 2023.</p>	<p>Surveys and species were as per Alignment Option 1 and mitigation measures to protect breeding birds during construction would be the same for both alignment options.</p>	<p>Given the similarity between species recordings both alignment options are considered to be</p>

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		<p>Several wader species, including golden plover, were breeding in the vicinity of the alignment option and/or the wider area during the surveys. Other species, including Birds of Conservation Concern such as skylark, are also expected to breed in the vicinity. An occupied buzzard nest was also observed approximately 250 m from Alignment Option 1.</p> <p>Mitigation measures would be required to protect all breeding birds, with particular consideration of SPA species and any other species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) or the UK Birds of Conservation Concern Red List (e.g., curlew and lapwing).</p>		broadly comparable with no optimal option.
	Hydrology Hydrogeology and Geology	<p>Alignment Option 1 is located within the surface water catchment of the Halladale River in particular the Allt na h-Eaglaise sub catchment. The alignment option would cross a tributary of the Allt na h-Eaglaise. SEPA floodplain mapping indicates a floodplain both with the Allt na h-Eaglaise and its tributary. Approximately 30 m of the alignment option is situated within the SEPA mapped floodplain.</p> <p>The majority of the alignment option is underlain by the Portskerra Psammite Formation (migmatitic psammite and semipelite). The eastern boundary of the alignment option is underlain by the Strath</p>	<p>Alignment Option 2 is located within the same surface water catchment as Alignment Option 1. It is also underlain by the same geology.</p> <p>Approximately 45 m of the alignment option is located within Class 1 priority peatland. The rest of the alignment option is located within Class 5 priority peatland.</p> <p>Existing peat probe data completed for nearby assessments indicates shallow peat depths (up to 0.5 m) within the area near Alignment Option 2. Additional probing will be required at the proposed pole locations to ensure that disturbance of peat has been avoided where</p>	<p>The alignment options are comparable.</p> <p>There is a slight preference for Alignment Option 2 as it does not cross any watercourses and less of the alignment is located within the mapped floodplain. However, it should be noted that while pole locations are not available at this stage, it's likely that the terminal pole of Alignment Option 2, prior to connecting onto the existing Strathy North 132 kV OHL, would</p>

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		<p>Halladale Granite bedrock (granite). Beneath the alignment option the bedrock is overlain by superficial deposits of alluvium to the west and hummocky glacial deposits to the east.</p> <p>Approximately 30 m of the alignment option is located within Class 1 priority peatland (near the tributary of the Allt na h-Eaglaise). The rest of the alignment option is located within Class 5 priority peatland.</p> <p>Existing peat probe data completed for nearby assessments indicates shallow peat depths (up to 0.5 m) within the area near Alignment Option 1. Additional probing will be required at the proposed pole locations to ensure that disturbance of peat has been avoided where possible, as required by NPF4, should this alignment option be progressed.</p> <p>Subject to best practice construction and mitigation it is likely that impacts on soils, peat, geology, and the water environment can be mitigated. Crossings of the tributary of the Allt na h-Eaglaise would also need to give due regard to flood risk (during construction and operation phases).</p>	<p>possible, as required by NPF4, should this alignment option be progressed.</p> <p>Alignment Option 2 would not cross any watercourses. A small section of the western extent of the alignment (approximately 10 m) is situated within the SEPA mapped fluvial floodplain associated with the tributary of the Allt na h-Eaglaise.</p> <p>Like Alignment Option 1, subject to best practice construction and mitigation it is likely that impacts on soils, peat, geology, and the water environment can be mitigated.</p>	<p>fall within the mapped floodplain, unlike Alignment Option 1.</p> <p>It is noted that site specific peat probing and condition assessment is required to assess existing peat deposits, and this should be used to inform the final wood pole locations, whichever alignment is progressed.</p>
Cultural Heritage	Designations	No constraints are predicted.	No constraints are predicted.	Both alignment options are considered comparable.

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	Cultural Heritage Assets	No constraints are predicted.	This alignment is close to, but would not intrude into, an area of prehistoric cultivation, defined by field clearance heaps and faint traces of lynchets. It is not associated with any hut circles.	Minor preference for Alignment Option 1.
People	Proximity to Dwellings	The property at Kirkton Farm is the closest dwelling to Alignment Option 1, located approximately 940 m to the north. At this distance, an OHL of the scale considered, is not considered likely to affect the amenity of this property. All other properties identified are over a kilometre from Alignment Option 1.	As per Alignment Option 1.	Both alignment options are considered comparable.
Landscape and Visual	Designations	Alignment Option 1 would not pass through any designated or protected landscapes. Farr Bay, Strathy and Portskerra Special Landscape Area (SLA) is located 1.6 km to the north of this alignment option at its closest point. However, it is unlikely that there would be effects on this designation.	As per Alignment Option 1.	Both alignment options are considered to be broadly comparable
	Landscape Character	Alignment Option 1 would be located within LCT 134: Sweeping Moorland and Flows, which is considered to be of Low-Medium sensitivity. Its exposure and extensive visibility are considered to be its main sensitivities along with its role as a backdrop to the more sensitive coastal landscapes to the north. However, sensitivity is	Alignment Option 2 would not differ significantly from Alignment Option 1 in terms of landscape character.	Both alignment options are considered to be broadly comparable.

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		<p>reduced by the presence of the existing Strathy North 132 kV OHL, which the alignment would connect onto, and be experienced in the context of, along with the fact that it is located near the edge of this LCT, adjacent to two areas of forestry, within an area which is less representative of the key qualities of this LCT. While it would marginally increase the presence of infrastructure of this type within a very localised area, it is not considered that it is likely to have a significant effect on the landscape character.</p> <p>Alignment Option 1 would be located 0.4 km to the west of LCT 142: Strath – Caithness & Sutherland, which is considered to be of Medium sensitivity, due to its containment and relatively small landscape patterns and scale. Alignment Option 1 would be experienced on the hillside above Strath Halladale, but within the context of the existing Strathy North 132 kV OHL, and due to their scale, they are not considered likely to have a significant impact on this LCT.</p>		
	Visual	<p>Alignment Option 1 would be located approximately 0.9 km west of the A897 which passes through Strath Halladale and would likely be visible from a section of this route, backclothed against the hillside alongside the Strathy North 132 kV OHL. It would also likely be seen from some residential receptors within Strath Halladale,</p>	<p>Alignment Option 2 would not differ significantly from Alignment Option 1 in terms of impacts on visual receptors.</p>	<p>Both alignment options are considered to be broadly comparable.</p>

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		<p>although may be partially screened to the north near Golval and Kirkton by a block of forestry immediately to the north-east of the alignment option.</p> <p>Alignment Option 1 would be located 300 m to the west of Core Path SU19.03 from Kirkton to Upper Bighouse, and would be visible from this route. However, the sensitivity of this route is reduced by the presence of the existing Strathy North 132 kV OHL which crosses it, and while this alignment would slightly increase the presence of infrastructure of this type for a section of this route, it is not considered likely to cause a considerable constraint.</p> <p>Other receptors in the area include the minor road to Kirkton, and a number of other unnamed tracks and paths. Views towards receptors in coastal areas to the north are considered likely to be screened by a combination of topography and vegetation.</p>		
Land Use	Agriculture	<p>The agricultural land crossed by Alignment Option 1 is identified as Class 5.3: land capable of use as improved grassland and although the sward can be established, deterioration can be rapid. The agricultural land is considered to be of limited agricultural value and is not considered to present any constraint to development.</p>	As per Alignment Option 1.	Both alignment options are considered comparable.

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	Forestry	Alignment Option 1 would have no interaction with commercial forestry.	As per Alignment Option 1.	Both alignment options are considered comparable.
	Recreation	<p>Alignment Option 1 would be located approximately 1 km to the west of the A897, which runs from Helmsdale to Melvich, and is frequently used by tourists. While the alignment option would be noticeable in views for a short section of this recreational route, it would appear backclothed against the hillside and in combination with the existing Strathy North 132 kV OHL.</p> <p>Alignment Option 1 would be located approximately 300 m west of Core Path SU19.03, which runs along the west of the Halladale River between Upper Bighouse and Cemy. While the alignment option would be seen in views for recreational users of this route, the presence of the existing Strathy North 132 kV OHL already reduces the sensitivity. It is not considered a constraint to development.</p>	As per Alignment Option 1.	Both alignment options are considered comparable.
Planning	Policy	Compatibility to National, Regional and Local planning policy will in large depend on avoiding or minimising potential constraints, particularly in relation to potential impacts on the natural environment. Although Alignment Option 1 is not located directly within a natural heritage designated site, there is potential for indirect impact on the qualifying features of the SAC and	As per Alignment Option 1.	Both alignment options are considered comparable.

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		<p>some SPA breeding bird populations that could make use of surrounding habitats. Good practice mitigation measures would be required to avoid or reduce effects, to allow adherence with planning policy.</p>		
	Proposals	<p>In terms of proximity to proposals, Alignment Option 1 would be located approximately 545 m to the east of the proposed Kirkton wind turbines. It is for this wind farm that this grid connection would be required.</p> <p>No other notable proposals have been identified.</p>	As per Alignment Option 1.	Both alignment options are considered comparable.