

ACHANY EXTENSION WIND FARM TECHNICAL APPENDIX 9.2

Information to Inform an Appropriate Assessment



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1 BACKGROUND

Screening and Site Context

- 1.1 As part of the assessment of the Proposed Development effects on IOFs, work was undertaken to identify Special Protection Areas/Ramsar sites whose qualifying species could have connectivity to the Proposed Development.
- 1.2 As a starting point, all SPAs within 20km of the Site were identified (see **Chapter 9** Figure 9.1), then distances from the SPA to the Proposed Development were compared to species' connectivity distances published by NatureScot (2016).
- 1.3 Consideration was also given to the Zone of Influence (Zol) of Proposed Development effects, and the impact pathways through which these effects may impact IOFs¹.
- 1.4 This results of this screening process are shown in **Chapter 9** Table 9.7, confirming only one SPA/Ramsar site was screened in. This is the Caithness and Sutherlands Peatlands SPA, that borders the Site its eastern side (**Chapter 9** Figure 9.1).
- 1.5 The SPAs that were screened out were:
- Inverpolly, Loch Urigill and nearby Lochs SPA;
 - Lairg and Strath Brora Lochs SPA; and
 - Strath Carnaig and Strath Fleet Moors SPA.
- 1.6 These are all beyond connectivity distances from their respective qualifying interests, and outwith the Zol for the Proposed Development. As a result, there is no likely significant effect from the Proposed Development on these SPAs, and they are screened out of the Appropriate Assessment.
- 1.7 The Caithness and Sutherland Peatlands SPA is located across the northern-most parts of mainland Scotland. It contains a large proportion of peatland, which forms one of the largest and most intact areas of blanket bog in the world. These diverse peatland and freshwater habitats support a wide variety of breeding birds including internationally important populations of raptors, wildfowl and waders. Likely Significant Effect has been concluded for Caithness and Sutherland Peatlands SPA.
- 1.8 The SPA has 12 species qualifying under Article 4.1 or 4.2 of the Directive (79/409/EEC).

Baseline Information for the Proposed Development

- 1.9 To inform the Appropriate Assessment for the Proposed Development on the Caithness and Sutherlands Peatlands SPA, comprehensive baseline data on birds on and around the site was compiled using a combination of desk study and September 2018 to August 2020 fieldwork. Consideration has also been given to the habitat baseline data collected for the Proposed Development and reported in **Chapter 8** of this EIA Report and its associated Technical Appendices.
- 1.10 This 2018 - 2020 baseline has also been considered in the longer-term context of the previous additional surveys carried out over much of the same area in April 2010 to March 2012 for the previous Glencassley Wind Farm application, made by the Applicant. These results are reported in SSE (2012), detailing its ornithological and habitat characteristics at the time. Findings for IOFs are included in Chapter 9 Section 9.6 and in Technical Appendix 9.1. Given land management has been consistent over this time, and habitats have remained comparable, having a decade-long span of data for the site gives particular confidence in the findings of the Appropriate Assessment, benefitting from knowledge of the bird activity on and above the Site over the contemporary and

¹ As noted in Chapter 9, The Zone of Influence (Zol) is the area over which an individual ornithological feature may be subject to a potentially significant effect resulting from changes in the baseline environment due to the Proposed Development.

longer period.

- 1.11 A further contribution to the depth of understanding of the bird activity in the wider area, which is of particular relevance to the assessment of the effects of wind farm construction and operation on key bird species at the Proposed Development, has been the insights from further bird monitoring at the nearby Achany Wind Farm. The pre, during and post-construction survey work at Achany Wind Farm carried out over the period 2003 to 2019 has been reported (SSE 2019) and taken into account also.
- 1.12 Although formerly a conifer plantation prior to its development, the insights provided from pre, during and post-construction bird surveys at the nearby Rosehall Wind Farm also provide additional insights into the effects of wind farm development on greenshank (RWE/E.ON Climate and Renewables (2019)).
- 1.13 Along with a range of other evidence, the insights from these sites and others have also been used in this report to inform the Appropriate Assessment of the Proposed Development. The analysis of the 2018 - 2020 baseline has taken account of contemporary guidance and the most recent avoidance rates for collision risk modelling (NatureScot 2016, 2018).
- 1.14 Through the compilation of the ornithology baseline for the Proposed Development, four of the 12 SPA qualifying species of the Caithness and Sutherland Peatlands SPA are screened out from the Appropriate Assessment because they are absent from the site and survey buffers. These are:-
- wood sandpiper
 - short-eared owl
 - common scoter, and
 - wigeon.
- 1.15 The Proposed Development has no potential effect on these species, given their absence from the site and its surroundings, and the lack of impact pathways. It is therefore possible to conclude beyond reasonable scientific doubt that the Proposed Development would have no adverse effect on these qualifying species of the Caithness and Sutherlands Peatlands SPA.
- 1.16 The Appropriate Assessment does however, screen in the remaining eight qualifying species, namely:-
- red-throated diver
 - black-throated diver
 - golden eagle
 - hen harrier
 - merlin
 - dunlin
 - golden plover, and
 - greenshank.

In Combination Effect of Other Plans and Projects

- 1.17 The Appropriate Assessment requires other plans and projects to be considered to examine if there is an 'in combination' adverse effect on site integrity of the SPA. The effect of the Proposed Development has therefore also been assessed in combination with the plans and projects considered to determine if they had impact pathways to the SPA.

- 1.18 The potential additive effects that could theoretically combine to have an adverse effect on the SPA's integrity are primarily collision risk and displacement from wind farms, but consideration was also given to construction and operational disturbance, and to barrier effects.
- 1.19 NatureScot provided a spreadsheet of all wind farm developments with potential connectivity to the Caithness and Sutherland Peatlands SPA, summarising available information on predicted collision rates and territory displacement. Consideration was given to these data (updated where relevant), as part of the in combination assessment for the Proposed Development. The details of the development are presented in Technical Appendix 9.1 (Annex H), and include projects shown in Figure 9.2 Chapter 9. The process for identifying potential in combination effects again used the NatureScot (2016) connectivity distances for qualifying species, and impact pathways through the ZOI (for example disturbance risk, using disturbance distances from Cutts et al. (2013) and Ruddock and Whitfield (2007)).

Information to Inform the Appropriate Assessment

- 1.20 The information to inform the appropriate assessment is provided in **Table 1**, identifying the predicted effects for each screened in species against the conservation objectives of the SPA, and covering the construction, operation and decommissioning of the Proposed Development.
- 1.21 The results of the in combination assessment show there are no additional predicted effects to consider for any qualifying species, other than golden eagle (from collision), and dunlin, golden plover and greenshank (displacement and collision). The relevant details are included in the 'Findings' column of **Table 1**.
- 1.22 The Proposed Development would not result in in combination disturbance, displacement, collision or barrier effects on any SPA qualifying species, alone or in combination with other plans and projects.
- 1.23 The same also applies to the three features of the Caithness and Sutherland Peatlands Ramsar site (Arctic skua, curlew and breeding graylag geese), as covered in Chapter 9, Section 9.6 (paragraphs 9.6.124 to 9.6.127, and Table 9.8).
- 1.24 It is therefore concluded beyond reasonable scientific doubt, that the Proposed Development would not adversely affect the integrity of the Caithness and Sutherland Peatlands SPA/Ramsar site, alone or in combination with other plans and projects, assessed against the SPA's conservation objectives.

Table 1. Designated Ornithological Features of the Caithness and Sutherland Peatlands SPA Adjacent to the Site

Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
Red-throated Diver						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of diver habitat in the SPA	None	None	None	High
	Operation	No deterioration of diver habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of diver habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding divers were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to divers during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
3. Population of the species as a viable component of the site is maintained in the long term	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	No flights recorded across the site and no collision risk. Therefore, no effect on mortality and population viability.	None	None	None	High
	Decommissioning	As for construction	None	None	None	High
4. Distribution of the species within site is maintained in the long term	Construction	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	As for Objective 2.	None	High
	Operation	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
		2011) within 1km of the Proposed Development.				
	Decommissioning	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of diver habitat in the SPA	None	None	None	High
	Operation	No effects on the distribution and extent of diver habitat in the SPA	None	None	None	High
	Decommissioning	No effects on the distribution and extent of diver habitat in the SPA	None	None	None	High
6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Construction	No effects on the structure, function and supporting processes of habitat supporting divers within the SPA	None	None	None	High
	Operation	No effects on the structure, function and supporting processes of habitat supporting divers within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting divers within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the long term	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Black-throated Diver						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of diver habitat in the SPA	None	None	None	High
	Operation	No deterioration of diver habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of diver habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding divers were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
				a suitably qualified ornithologist would ensure there is no disturbance to divers during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).		
	Operation	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
3. Population of the species as a viable component of the site is maintained in the long term	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	No flights recorded across the site and no collision risk. Therefore, no effect on mortality and population viability.	None	None	None	High
	Decommissioning	As for construction	None	None	None	High
4. Distribution of the species within site is maintained in the long term	Construction	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	As for Objective 2.	None	High
	Operation	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	None	None	High
	Decommissioning	There is no risk of disturbance to breeding divers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of diver habitat in the SPA	None	None	None	High
	Operation	No effects on the distribution and extent of diver habitat in the SPA	None	None	None	High
	Decommissioning	No effects on the distribution and extent of diver habitat in the SPA	None	None	None	High
6. Structure, function	Construction	No effects on the structure, function and	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
and supporting processes of habitats supporting the species is maintained in the long term		supporting processes of habitat supporting divers within the SPA				
	Operation	No effects on the structure, function and supporting processes of habitat supporting divers within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting divers within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the long term	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Golden Eagle						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of golden eagle habitat in the SPA	None	None	None	High
	Operation	No deterioration of golden eagle habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of golden eagle habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	There is no risk of disturbance to breeding golden eagle, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 2km of the Proposed Development.	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding golden eagle were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to this species during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	There is no risk of disturbance to breeding golden eagle, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 2km of the Proposed Development.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
3. Population of the species as a viable component of the site is maintained in the long term	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	<p>Collision risk modelling using the 2019 and 2020 breeding season means plus the 2019/2020 non-breeding season, and the 99% avoidance rate as precautionary approaches, the Proposed Development predicted 0.12 collisions a year, equivalent to one bird every 9 years.</p> <p>The in combination assessment concluded an additional 0.40 collisions a year predicted, giving an in combination predicted mortality of 0.5 birds a year. As discussed in Chapter 9 paragraph 9.10.13 and drawing on evidence presented in Annex J of Technical Appendix 9.1 (Whitfield and Fielding 2018) this addition from the Proposed Development is not considered to have an in combination adverse effect on the SPA.</p> <p>The NatureScot assessed condition of this qualifying species is favourably maintained (2016).</p>	The addition of an average of approximately 1 golden eagle every 9 years is not considered a significant addition to background mortality and would not threaten the viability of the SPA population being maintained in the long term.	None	None	High
	Decommissioning	As for construction	None	None	None	High
4. Distribution of the species within site is maintained in the long term	Construction	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Operation	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of golden eagle habitat in the SPA.	None	None	None	High
	Operation	No effects on the distribution and extent of golden eagle habitat in the SPA.	None	None	None	High
	Decommissioning	No effects on the distribution and extent of golden eagle habitat in the SPA.	None	None	None	High
6. Structure, function and supporting processes of	Construction	No effects on the structure, function and supporting processes of habitat supporting golden eagles within the SPA	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
habitats supporting the species is maintained in the long term	Operation	No effects on the structure, function and supporting processes of habitat supporting golden eagles within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting golden eagles within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the long term	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Hen Harrier						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of hen harrier habitat in the SPA	None	None	None	High
	Operation	No deterioration of hen harrier habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of hen harrier habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	There is no risk of disturbance to breeding hen harriers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 2km of the Proposed Development.	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding hen harriers were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to this species during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	There is no risk of disturbance to breeding hen harriers, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 2km of the Proposed Development.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
3. Population of the species as a	Construction	No effect on mortality and therefore on population viability.	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
viable component of the site is maintained in the long term	Operation	The number of 'at risk' flights recorded during 2019 and 2020 was very low (zero in 2019 and three in 2020). The predicted effect of the Proposed Development on hen harrier from collision is therefore considered negligible. No effect on mortality and therefore on population viability. The NatureScot assessed condition of this qualifying species is favourably maintained (2016).	The additional mortality would be negligible and would not threaten the viability of the SPA population being maintained in the long term.	None	None	High
	Decommissioning	As for construction	None	None	None	High
	4. Distribution of the species within site is maintained in the long term	Construction	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None
4. Distribution of the species within site is maintained in the long term	Operation	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
	5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of hen harrier habitat in the SPA.	None	None	None
5. Distribution and extent of habitats supporting the species is maintained in the long term	Operation	No effects on the distribution and extent of hen harrier habitat in the SPA.	None	None	None	High
	Decommissioning	No effects on the distribution and extent of hen harrier habitat in the SPA.	None	None	None	High
	6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Construction	No effects on the structure, function and supporting processes of habitat supporting hen harrier within the SPA	None	None	None
6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Operation	No effects on the structure, function and supporting processes of habitat supporting hen harrier within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting hen harrier within the SPA	None	None	None	High
	7. No significant disturbance of the species is maintained in the	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None
7. No significant disturbance of the species is maintained in the	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
long term	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Merlin						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of merlin habitat in the SPA	None	None	None	High
	Operation	No deterioration of merlin habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of merlin habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	There is no risk of disturbance to breeding merlin, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding merlin were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to this species during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	There is no risk of disturbance to breeding merlin, given no breeding pairs were recorded in 2019 or 2020 (or 2010 and 2011) within 1km of the Proposed Development.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
3. Population of the species as a viable component of the site is maintained in the long term	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	The number of 'at risk' flights recorded during 2019 and 2020 was so low (limited to two flights in the 2020 breeding season) that the predicted effect of the Proposed Development on merlin from collision is therefore considered negligible. No effect on mortality and therefore on population viability. The NatureScot assessed condition of this qualifying species is favourably maintained (2004).	The additional mortality would be negligible and would not threaten the viability of the SPA population being maintained in the long term.	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
	Decommissioning	As for construction	None	None	None	High
4. Distribution of the species within site is maintained in the long term	Construction	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Operation	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of merlin habitat in the SPA.	None	None	None	High
	Operation	No effects on the distribution and extent of merlin habitat in the SPA.	None	None	None	High
	Decommissioning	No effects on the distribution and extent of merlin habitat in the SPA.	None	None	None	High
6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Construction	No effects on the structure, function and supporting processes of habitat supporting merlin within the SPA	None	None	None	High
	Operation	No effects on the structure, function and supporting processes of habitat supporting merlin within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting merlin within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the long term	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Dunlin						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of dunlin habitat in the SPA	None	None	None	High
	Operation	No deterioration of dunlin habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of dunlin habitat in the SPA	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
2. To avoid significant disturbance to the qualifying species	Construction	Using a highly precautionary displacement distance of 500m, and assuming that all disturbed territories would be lost from the SPA population, the predicted level of disturbance (prior to mitigation) would be 4 to 6 SPA territories, equating to 0.2-0.3% of the SPA population (1,860 pairs).	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding dunlin were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to this species during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	Using a highly precautionary displacement distance of 500m, and assuming that all displaced territories would be lost from the SPA population, the predicted level of disturbance displacement (prior to mitigation) would be 4 SPA territories, equating to 0.2% of the SPA population (1,860 pairs).	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
3. Population of the species as a viable component of the site is maintained in the long term	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	Three on site flights were recorded during 2019 and one in 2020. The predicted effect of the Proposed Development on dunlin from such limited 'at risk' flight activity is therefore considered negligible, with no effect on mortality and on population viability. The NatureScot assessed condition of this qualifying species is favourably maintained (2015).	The additional mortality would be negligible and would not threaten the viability of the SPA population being maintained in the long term.	None	None	High
	Decommissioning	As for construction	None	None	None	High
4. Distribution of the species within site is maintained in the long term	Construction	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Operation	Given the maximum of 4 territories potentially displaced from the SPA, equating to 0.2% of the SPA population, if a highly precautionary 500m displacement distance is applied, and assuming all 4 territories would be lost to the SPA population, it is not	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
		<p>considered that there would be any overall impact on the distribution of the species within the SPA in the long term. Actual evidence from the operational Achany Wind Farm shows putative dunlin territory centres at approximately 250m from turbines, and a degree of habituation to turbines by waders (SSE 2019). In light of these findings, it is considered valid to conclude no significant change in distribution in the long term from the project alone.</p> <p>The in combination assessment concluded no additional territory displacement predicted, as discussed in Chapter 9 paragraph 9.10.23. The Proposed Development is not therefore considered to have an in combination adverse effect on the SPA.</p>				
	Decommissioning	If displacement had taken place, decommissioning would result in re-establishment of territories in the long term.	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of dunlin habitat in the SPA.	None	None	None	High
	Operation	No effects on the distribution and extent of dunlin habitat in the SPA.	None	None	None	High
	Decommissioning	No effects on the distribution and extent of dunlin habitat in the SPA.	None	None	None	High
6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Construction	No effects on the structure, function and supporting processes of habitat supporting dunlin within the SPA	None	None	None	High
	Operation	No effects on the structure, function and supporting processes of habitat supporting dunlin within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting dunlin within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
long term	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Golden Plover						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of golden plover habitat in the SPA	None	None	None	High
	Operation	No deterioration of golden plover habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of golden plover habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	Using a highly precautionary displacement distance of 500m, and assuming that all disturbed territories would be lost from the SPA population, the predicted level of disturbance (prior to mitigation) would be 2 to 3 SPA territories, equating to 0.2-0.3% of the SPA population (1,064 pairs).	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding golden plover were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to this species during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	Using a highly precautionary displacement distance of 500m, and assuming that all displaced territories would be lost from the SPA population, the predicted level of disturbance displacement (prior to mitigation) would be 1 to 2 SPA territories, equating to 0.1% to 0.2% of the SPA population (1,064 pairs).	None	None	None	High
	Decommissioning	As for construction	None	As for construction	None	High
3. Population of the species as a viable component of the site is maintained in the long term	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	The predicted collisions rates for the 2019 breeding season were 0.04 birds and 0.02 birds for the 2020 breeding season. Evidently, collision risk is extremely low, with an average of 0.03 birds per breeding season, or one breeding season collision every 33 years. The predicted effect of the Proposed Development on golden plover from collision is therefore of negligible	The additional mortality would be negligible and would not threaten the viability of the SPA population being maintained in the long term.	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
		<p>magnitude, with no effect on mortality and on population viability.</p> <p>The in combination assessment (as discussed in Chapter 9 paragraph 9.10.26) concluded that the predicted mean collision rate of 0.03 birds a breeding season is so small that no in combination effects are predicted.</p> <p>The NatureScot assessed condition of this qualifying species is favourably maintained (2015).</p>				
	Decommissioning	As for construction	None	None	None	High
4. Distribution of the species within site is maintained in the long term	Construction	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Operation	<p>Given the maximum of 2 territories (rounded up from a mean of 1.5) potentially displaced from the SPA, equating to 0.1% of the SPA population, if a highly precautionary 500m displacement distance is applied, and assuming all 1 to 2 territories would be lost to the SPA population, it is not considered that there would be any overall impact on the distribution of the species within the SPA in the long term.</p> <p>The in combination assessment concluded 1 additional territory displacement predicted, as discussed in Chapter 9 paragraph 9.10.27. The loss of 2 territories (0.2%) of the population (assuming displacement out to 500m) from the SPA due to the Proposed Development is not considered to have an in combination adverse effect on the SPA.</p>	None	None	None	High
	Decommissioning	If displacement had taken place, decommissioning would result in re-establishment of territories in the long term.	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of golden plover habitat in the SPA.	None	None	None	High
	Operation	No effects on the distribution and extent of golden plover habitat in the SPA.	None	None	None	High
	Decommissioning	No effects on the distribution and extent of golden plover habitat in the SPA.	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Construction	No effects on the structure, function and supporting processes of habitat supporting golden plover within the SPA	None	None	None	High
	Operation	No effects on the structure, function and supporting processes of habitat supporting golden plover within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting golden plover within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the long term	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
Greenshank						
1. To avoid deterioration of the habitats of the qualifying species	Construction	No deterioration of greenshank habitat in the SPA	None	None	None	High
	Operation	No deterioration of greenshank habitat in the SPA	None	None	None	High
	Decommissioning	No deterioration of greenshank habitat in the SPA	None	None	None	High
2. To avoid significant disturbance to the qualifying species	Construction	Using a highly precautionary displacement distance of 500m, and assuming that all disturbed territories would be lost from the SPA population, the predicted level of disturbance (prior to mitigation) would be 1 to 2 SPA territories, equating to 0.2-0.3% of the SPA population (653 pairs).	None	Pre-commencement breeding bird surveys would check for any change to the baseline. In the event that breeding greenshank were identified, as part of the Bird Protection and Mitigation Plan within the Construction and Environment Management Plan (CEMP), a watching brief by a suitably qualified ornithologist would ensure there is no disturbance to this species during construction. This would be implemented in liaison with the Ecological Clerk of Works (ECoW).	None	High
	Operation	Using a highly precautionary displacement distance of 500m, and assuming that all displaced territories would be lost from the SPA population, the predicted level of disturbance displacement (prior to mitigation) would be 1 to 2 SPA territories,	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
	Decommissioning	equating to 0.2% to 0.3% of the SPA population (653 pairs).				
3. Population of the species as a viable component of the site is maintained in the long term	Decommissioning	As for construction	None	As for construction	None	High
	Construction	No effect on mortality and therefore on population viability.	None	None	None	High
	Operation	The predicted collisions rates of 0.07 birds for the 2019 breeding season and 0.02 birds for 2020, give an average of 0.05 collisions per breeding season. The predicted effect of the Proposed Development on greenshank from collision is therefore of negligible magnitude, with no effect on mortality and on population viability. The in combination assessment (as discussed in Chapter 9 paragraph 9.10.30) concluded that the predicted mean collision rate of 0.05 birds a breeding season is so small that no in combination effects are predicted. The NatureScot assessed condition of this qualifying species is favourably maintained (2015).	The additional mortality would be negligible and would not threaten the viability of the SPA population being maintained in the long term.	None	None	High
4. Distribution of the species within site is maintained in the long term	Decommissioning	As for construction	None	None	None	High
	Construction	There would be not be any impact on the distribution of the species within the SPA in the long term.	None	None	None	High
	Operation	As noted by Humphreys <i>et al.</i> (2015), post-construction monitoring, has enabled NatureScot to consider that greenshank do not show a high level of behavioural displacement around turbines, drawing on evidence including from Achany Wind Farm (RPS 2015) and Rosehall Wind Farm (<i>ibid.</i>). More recent monitoring from both sites (SSE 2019, and RWE/E.ON Climate and Renewables 2019) suggests that greenshank continue to nest in proximity to these wind farms. This is consistent with post-construction findings from Causeymire (Ventient Energy 2020) and from Strathy North (SSE 2020). In light of these findings, it is considered valid to conclude no	None	None	None	High

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Conservation Objective	Project Phase	Findings in Relation to This Conservation Objective for the Proposed Development Alone and In Combination	Impact Before Mitigation ¹	Mitigation	Residual Impact After Mitigation	Degree of Certainty
		significant change in distribution in the long term.				
	Decommissioning	If displacement had taken place, decommissioning would result in re-establishment of territories in the long term.	None	As for construction	None	High
5. Distribution and extent of habitats supporting the species is maintained in the long term	Construction	No effects on the distribution and extent of greenshank habitat in the SPA.	None	None	None	High
	Operation	No effects on the distribution and extent of greenshank habitat in the SPA.	None	None	None	High
	Decommissioning	No effects on the distribution and extent of greenshank habitat in the SPA.	None	None	None	High
6. Structure, function and supporting processes of habitats supporting the species is maintained in the long term	Construction	No effects on the structure, function and supporting processes of habitat supporting greenshank within the SPA	None	None	None	High
	Operation	No effects on the structure, function and supporting processes of habitat supporting greenshank within the SPA	None	None	None	High
	Decommissioning	No effects on the structure, function and supporting processes of habitat supporting greenshank within the SPA	None	None	None	High
7. No significant disturbance of the species is maintained in the long term	Construction	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Operation	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High
	Decommissioning	This is already covered under the 2nd Conservation Objective, above	None	See the 2nd Conservation Objective	None	High

¹ On a precautionary basis, Likely Significant Effect has been assumed and a Habitats Regulation Appraisal been carried out to inform the Ministers' Appropriate Assessment.

2 REFERENCES

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