VOLUME 2 – CHAPTER 15: CUMULATIVE EFFECTS ASSESSMENT

Figures (Volume 3 of this EIA Report)

There are no figures associated with this Chapter

Appendices (Volume 4 of this EIA Report)

There are no appendices associated with this Chapter.

15. CUMULATIVE EFFECTS ASSESSMENT

15.1 Introduction

15.1.1 This chapter summarises the potential significant cumulative effects of the Proposed Development as described in each technical chapter (Chapters 7 to 14) and provides a qualitative assessment of the potential for interactive effects.

15.1.2 This chapter presents information relevant to the Proposed Development. It should be read in conjunction with Chapter 3: Description of the Proposed Development, Chapter 5: EIA Process and Methodology as well as Chapters 7-14 of the EIA Report.

15.1.3 This assessment was undertaken by LUC.

15.1.4 The following terminology will be referred to throughout this chapter:

- Site: all land within the planning application boundary (**Figure 1.1: Site Location**).
- Proposed Development: The infrastructure including the platform, bays, control buildings, access tracks, drainage and landscape features and temporary construction compounds (see **Chapter 3: Description of the Proposed Development**).
- Receptor: A distinct part of the receiving environment on which effects could occur and can be the subject of specific assessments.
- Study area: the geographical area in which a given assessment would take place.
- Significant Effect: a product of the sensitivity of a receptor and the magnitude of any given impact on a receptor.
- Cumulative Effect: the effect of more than one significant effect acting on a receptor. These may be;
  - In-combination effects: effects from the Proposed Development together with effects from other reasonably foreseeable future developments.
  - Interactive effects: where different types of impact may be experienced by the same receptor for example, the possibility that a receptor may experience an impact on visual amenity, and an increase in noise, which taken together result in a more significant impact than the impacts in isolation.
- Indirect Effect: an effect arising as an adjunct to a direct significant effect, usually as a result of a complex impact pathway. An example of this, not related to the Proposed Development, would be increased ambient sulphur oxide resulting in deposition leading to acidification of soils.
- Transboundary Effect: effects associated with a development that cross political or other socio-geographical boundaries.

15.2 Scope of the Assessment

Effects Assessed

15.2.1 This chapter presents the following;

- The potential for direct significant residual (i.e., after mitigation) cumulative effects on receptors resulting from the Proposed Development during construction and when the Proposed Development is operating, in combination with other reasonably foreseeable developments in the vicinity (in-combination effects).
- The potential for different impacts on local receptors arising from the Proposed Development during construction or operation which when occurring together, interact in such a way that the effect experienced by the receptor is greater and possibly more significant (interactive effects).

Effects Scoped Out

15.2.2 In-line with the methodology set-out in **Chapter 5: EIA Process and Methodology** and the spatial scope of the study area, the following effects are scoped out:

- Indirect effects: scoped out due to the assessment in this EIAR not having identified any significant indirect effects; and

- Transboundary effects: scoped out due to the spatial extent of the significant effects identified in this EIAR not being transboundary in nature.

Study Area

15.2.3 The study area for this chapter is defined by the study area of the technical chapters it draws on as the potential for a cumulation of effects cannot exist outwith the spatial scale of the primary effects themselves. Further, the potential for synergistic effects is defined by the smallest spatial scale of any given effect that contributes to the synergy. The study areas for each technical assessment have already been defined in the relevant technical chapters and will not be replicated here.

15.3 Assessment Methodology

Legislation, Policy and Guidance

15.3.1 There is no legislation or policy directing the assessment of cumulative effects within EIA, although there is guidance from the Planning Inspectorate which is pertinent to Nationally Significant Infrastructure Projects in England and Wales. As a result, the assessment of potential synergistic cumulative effects is a qualitative assessment based on previous project experience and professional judgement.

Identification and Assessment of In-Combination and Interactive Effects

15.3.2 For in-combination effects, the assessment has considered information on the nature and characteristics of reasonably foreseeable projects, and if available, information on their possible environmental effects, which is available in the public domain, such as screening or scoping reports or information on the respective developer's websites (references are cited where relevant). Three categories of reasonably foreseeable projects have been used in this assessment, Associated SSEN Transmission Developments (see **Chapter 1: Introduction**), Other SSEN Transmission Developments and Other Third Party Developments.

15.3.3 It has been assumed that, unless the Proposed Development has been predicted to give rise to a significant effect, it would be unlikely that a significant cumulative effect would arise from the Proposed Development when combined with other projects. Nevertheless, the potential cumulative interactions are set out in each chapter so that the rationale for the assessment is transparent.

15.3.4 **Table 15.1: Summary of Predicted Significant Effects** demonstrates that significant effects arising from the Proposed Development have been predicted only with reference to landscape receptors and visual receptors. No significant effects have been predicted on other environmental assets or receptors, which is a consequence of the generally localised scale of impact and the generally low sensitivity of environmental receptors, resulting in impacts which are generally low/minor or negligible

Impact Category	Summary of Predicted Significant Effects
Landscape effects	Effects on the landscape character of the Site during construction and once operational. Effects on the Summits and Plateaux – Aberdeenshire Landscape Character Type during construction and once operational, focussed within the area defined by eastern extents of Fetteresso Forest, between the minor road south of the Site and of Slug Road/ A957 top the north. Effects on the Coastal Farmed Ridges and Hills – Aberdeenshire Landscape Character Type, focussed within the area defined by northern slopes of the Carmont Hill within the Carron Water Valley Balkello Hill and the southern edge of Fetteresso Forest during construction and operation.
Effects on views and visual amenity	Views represented by VP1, located along a low ridge associated with Carmont Hill at Hillhead of Auquhirie. The view is representative of views experienced by residential receptors along the northern facing slopes of this ridge. Significant effects on the viewpoint are assessed during the construction and operational phases. Views represented by VP5, located open section of forest track on the western slopes of Hill of Swanley in Fetteresso Forest. This viewpoint is representative of views experienced by recreational receptors travelling along this forest track. Significant effects on the viewpoint are assessed during the construction and operational phases Views from sections of track within Fetteresso Forest surrounding the Site on the approach to Hill of Trusta, and from sections of track around Garrison Hill to the north of the Site,

Impact Category	Summary of Predicted Significant Effects
	where effects on views from some sections of these tracks are assessed as significant during construction and operation.Views from some localised parts of the road network south of the Site, where significant effects on views from some sections of this road network are found during construction and operation.
Effects on heritage assets	None predicted
Effects on protected species	None predicted
Effects on water resources	None predicted
Effects on traffic and access	None predicted
Effects on noise sensitive receptors	None predicted

15.3.5 In the absence of information of the physical characteristics of the reasonably foreseeable projects considered in the cumulative effects assessment, given the fact they are no larger in footprint than the Proposed Development (from the information that is available) and given that their environmental settings are broadly similar to that of the Proposed Development, it is reasonable to assume that their environmental effects would largely be similar in character and significance to those of the Proposed Development. The respective planning applications for each of the projects will identify in due course these detailed assessments.

15.3.6 It is therefore reasonable to assume that where low/minor/negligible effects have been predicted for the Proposed Development, it is likely to be the case that similar effects will be predicted for the "other" foreseeable projects. As a result, major effects on heritage assets, protected species and water resources are unlikely. In the case of traffic and noise, the Proposed Development is predicted to generate levels of traffic and noise (at noise sensitive receptors) well below the thresholds used to define a significant effect. Given the nature of the foreseeable projects, it is very unlikely that these would give rise to traffic or noise levels, after all mitigation has been applied, which when combined with the Proposed Development, would exceed these thresholds.

15.3.7 Clearly, without more information on the characteristics of the foreseeable projects identified, it is not possible to be definitive. **Table 15.2: Summary of Likely Significant In-Combination Effects** below summarises the assessment of cumulative effects based on the professional experience and judgement of the EIA team (see Chapter 2: The EIA Team).

15.3.8 No additional research or data collection has been undertaken to inform this assessment, other than that set out in the individual technical chapters and the review of publicly available information on foreseeable projects, as indicated above.

Assessment Assumptions and Limitations

15.3.9 No additional research or data collection has been undertaken to inform this assessment, other than that set out in the individual technical chapters and the review of publicly available information on foreseeable projects, as indicated above. The identification and assessment of cumulative effects has been based on professional judgement by assessors experienced in the assessment of environmental effects.

15.3.10 Assessing in-combination effects has been informed using information on the nature and character of foreseeable projects available in the public domain and professional experience of the nature and likely scale of environmental impacts such projects might give rise to.

15.3.11 The assessment draws on existing assessments and, as such, inherits any limitations of the initial assessments that are described in each respective chapter.

15.4 Summary of Likely Significant In-Combination Cumulative Effects

15.4.1 **Table 15.2: Summary of Likely Significant In-Combination Cumulative Effects** below summarises the likely significant cumulative in-combination effects of the Proposed Development (PD) with other foreseeable projects.

Table Error! No text of specified style in document..**2: Summary of Likely Significant In-Combination Cumulative Effects**

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
Associated SSEN Transmission Developments								
Kintore to Tealing 400 kV OHL	The Proposed Development is not predicted to have a significant effect upon net woodland area, though it will result in some fragmentation and isolation of small forestry coupes, although with embedded mitigation through management felling and restocking plans, there is no significant effect on overall woodland area, and fragmentation/isolation of the forest. The Kintore to Tealing 400kV OHL does not introduce any significant	The Proposed Development and the Kintore to Tealing 400 kV OHL in combination are predicted to have significant cumulative impacts on the character of the two landscape types (LCT 29 and LCT 24) considered during construction and once commissioned. Significant cumulative visual effects are also predicted during construction and operation, albeit limited to the locations represented by Viewpoints 1 and 5, as well as parts of	The Proposed Development and the Kintore to Tealing 400 kV OHL will have no significant cumulative effects upon buried or upstanding archaeological remains, or settings of heritage assets considered as part of the EIA for the Proposed Development. It is also considered that the Kintore to Tealing 400 kV OHL project is unlikely to have significant adverse setting impacts on the settings of designated heritage assets	The Proposed Development is not predicted to have a significant effect upon Mergie LNCS, nor on habitats of conservation concern. While some will be lost, the habitats are generally small and in poor condition. As a result, these losses are not considered significant. No significant in combination cumulative effects upon badger, bats, otter, wildcat, red squirrel, or pine marten are predicted during construction or once operational.	The Proposed Development is predicted to have no significant cumulative effects upon ornithology either during the construction or once operational. This includes all ornithological receptors considered in the assessment of the Proposed Development namely qualifying species of SPAs, Schedule 1 raptors and breeding birds.	The Proposed Development will have no significant cumulative effects upon hydrological resources either during construction or once operational. This includes all hydrological resources considered in the assessment of the Proposed Development namely groundwater and surface water quality and flood risk.	The Proposed Development is unlikely to generate significant traffic flows on the local road network or on road users. Given the nature of the OHL project, its peak of construction traffic will not coincide with that of the Proposed Development. The Proposed Development will generate minimal traffic during the operational phase. In combination with the Proposed Development, the traffic volumes generated during construction of the Kintore-Tealing 400kV	It has been concluded that there will be no significant adverse effects upon NSRs during the construction of the Proposed Development and once operational. Predicted noise levels fall well below the thresholds used to define significant effect. The same conclusion has been made following modelling the construction and operational noise of the Kintore-Tealing 400kV OHL. As a result, no significant cumulative

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
	additional loss of woodland area. As a result, no significant cumulative effects of the Proposed Development and the OHL are likely.	Fetteresso Forest and around Garrison Hill.	within the Outer Study Area.				OHL will not have a significant cumulative effect.	effects have been predicted.
Other SSEN Transmission Developments								
Fetteresso 132 kV substation extension	As for K-T OHL above	The proposed Fetteresso substation extension is predicted to have significant effects on LCT 29 during construction and operation. Significant visual effects on the minor road network south of the Site and on localised sections of forest tracks within Fetteresso Forest are predicted during construction and operation. In combination with the Proposed Development, significant cumulative effects on	The proposed extension of the existing Fetteresso substation will not lie within, or extend into, the Proposed Development Site, and will consequently not affect any of the buried archaeological remains within the Inner Study Area. No significant cumulative effects upon buried or upstanding archaeological remains or setting of designated heritage assets are predicted	The proposed Fetteresso 132 kV substation extension is not hydrologically connected to Mergie LNCS, as such no cumulative significant effects are predicted. The proposed substation extension is not predicted to have a significant effect upon habitats of conservation concern nor upon badger, bats, otter, wildcat, badger, red squirrel, or pine marten. As a result, no significant	Given the absence of significant ornithological receptors at the existing Fetteresso substation and the small scale of the proposed extension, significant ornithological effects are unlikely. It follows that significant in-combination effects are unlikely.	The information available on the proposed substation extension does not identify any likely significant effects in isolation during construction and operation and it is therefore concluded that there is no likely significant cumulative effect.	The extension works are not scheduled to coincide with the peak construction activity of the Proposed Development. Neither the Proposed Development nor the substation extension will generate significant traffic during the operational phase. In combination, the Proposed Development and proposed substation extension are unlikely to result in significant cumulative traffic	The proposed extension of Fetteresso substation is to accommodate new electrical equipment. Given its size relative to the Proposed Development, the new extent of electrical infrastructure would still be much smaller than that of the Proposed Development. Given that, in broad terms, the doubling of sound power output results in a 3dB increase, that the proposed new equipment at the extension,

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		landscape are predicted during both construction and operation. During construction and operation, significant cumulative visual effects are predicted from recreational routes within parts of Fetteresso Forest (not including Viewpoint 5).	during construction or operation of the PD in combination with, the Fetteresso 132 kV substation.	cumulative ecological effects are predicted. .			and access impacts.	a new 132kV and new 400kV transformers is well below a doubling of the equipment planned for the Proposed Development, predicted noise levels associated with the Proposed Development are well below significance thresholds, no significant cumulative effects are predicted.
Network Rail Drumlithie	As for the proposed Kintore-Tealing 400kV OHL above	The Network Rail Drumlithie development is unlikely to have significant effects on LCT 29 and 24 and on views from localised sections of the minor road network south of the Site during construction by virtue of its small scale and the fact that the connection would	As above, no significant cumulative effects predicted for buried, upstanding archaeological or historic remains, or setting of designated heritage assets.	As above, no connection between this project and Mergie LNCS. As above, no cumulative significant effects for habitats of concern. As above, no significant cumulative effects upon badger, bats, otter, wildcat, badger, red squirrel, or pine	As Fetteresso 132 kV substation extension above	Notwithstanding that the connection would likely be underground, significant hydrological effects are unlikely given the small scale, that sensitive receptors would be avoided during routeing and no Groundwater Dependent Terrestrial	This project is unlikely to generate significant traffic flows on the local road network or road users by virtue of its small scale. Significant in-combination effects are therefore very unlikely.	Construction works would be small in extent compared to the Proposed Development. Significant cumulative construction noise effects are very unlikely as a result. The proposed connection would not generate airborne noise.

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		likely be underground. In combination with the Proposed Development, significant cumulative effects are predicted for both LCT 29 and 24 during construction. During operation however cumulative effects on landscape and key views are not considered to be significant.		marten are predicted.		Ecosystems have been identified.		
Fiddes 132 kV replacement	As for K-T OHL above	The Fiddes 132 kV replacement is predicted to have significant effects on LCT 29 and 24 during both construction and operation. Significant visual effects are predicted from Viewpoints 1 and 2 and localised sections of the minor road network south, east and southeast of the	As above, no significant cumulative effects predicted for buried, upstanding archaeological remains, setting of designated heritage assets, including possible military crash site during construction or once operational.	As above, no connection between this project and Mergie LNCS. As above, no cumulative significant effects for habitats of concern. As above, no significant cumulative effects upon badger, bats, otter, wildcat, badger, red squirrel, or pine	As for Kintore to Tealing 400 kV OHL above	As Kintore to Tealing 400 kV OHL above	As for Kintore to Tealing 400 kV OHL above	As for Kintore to Tealing 400 kV OHL above

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		Site and parts of Fetteresso Forest during construction and operation. In combination with the Proposed Development, significant cumulative effects are predicted for both LCT 29 and 24 during construction and operation. Significant cumulative visual effects are predicted on visual receptors in parts of Fetteresso Forest during both construction and operation, as well as on Viewpoint 1 during operation.		marten are predicted.				
SSEN Transmission Offshore Grids Project	As for K-T OHL above	The potential Offshore Grids Project is likely to have significant effects on LCT 29 and 24 during construction and on LCT 29 only once	Based on the results of the assessment of the Proposed Development, significant effects from the potential Offshore Grids Project on buried,	As above, no connection between this project and Mergie LNCS. As above, no cumulative significant effects	Based on the assessment of the Proposed Development, significant effects arising from the potential Offshore Grids Project are	Based on the assessment of the Proposed Development, significant hydrological effects from the Offshore Grids Project are	While a construction programme for the potential Project is unknown, it would be very unlikely to correspond	As indicated, construction of the Project is unlikely to occur during construction of the Proposed Development. The principal

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		constructed. Significant visual effects are predicted from Viewpoint 1, 2, 4 and 5 and sections of routes within the study area, during construction and operation, as well as from Viewpoint 3 during operation. In combination with the Proposed Development, significant cumulative effects are predicted for both LCT 29 and 24 during construction and LCT 29 during operation. Significant cumulative visual effects are predicted on visual receptors with parts of Fetteresso Forest during construction, and on visual receptors at Viewpoints 1 and 5, as well as	upstanding archaeological or historical remains are unlikely. Significant cumulative effects are therefore unlikely as a result.	for habitats of concern. As above, no significant cumulative effects upon badger, bats, otter, wildcat, badger, red squirrel, or pine marten are predicted.	unlikely. It follows that significant cumulative effects are also unlikely.	unlikely. The project would avoid impacts to the Burn of Baulks and Burn of Day, and PWS, through the location of the project and associated infrastructure. No flood risks have been identified for the Proposed Development and it follows that flood risks from the potential Offshore Grids Project would also be unlikely. As a result, cumulative in combination effects on hydrology receptors are unlikely.	directly the construction phase of the Proposed Development. As with the Proposed Development, operations and maintenance activities will not be significant generators of traffic. As a result, significant in-combination effects on the road network and users are unlikely. .	electrical equipment is enclosed and external airborne noise levels would be unlikely to exceed background noise levels. Cumulative in combination effects are therefore considered unlikely.

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		parts of Fetteresso Forest and around Garrison Hill during operation.						
Glendye Wind Farm Grid Connection	As for K-T OHL above.	It is possible that above ground section of the proposed wind farm connection may result in significant effects on LCT 29. Given that the connection is west of the existing Fetteresso substation and not visually connected with the Proposed Development, cumulative visual effects are unlikely.	As above, no significant cumulative effects are predicted for buried or upstanding archaeological remains or features of historical interest, nor on designated heritage assets during construction or once operational. The wind farm connection is unlikely to have significant adverse setting impacts on the settings of designated heritage assets within the Outer Study Area as it is likely to be largely, if not entirely, screened in views from the heritage assets	As above, no connection between this project and Mergie LNCS. As above, no cumulative significant effects for habitats of concern. As above, no significant cumulative effects upon badger, bats, otter, wildcat, badger, red squirrel, or pine marten are predicted.	As Kintore-Tealing 400kV above.	As for Kintore-Tealing 400kV OHL above.	As for Kintore-Tealing 400kV OHL above.	As for Kintore-Tealing 400kV OHL above.

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
			within the Outer Study Area by intervening topography and surrounding commercial forestry.					
Third Party Developments								
Bowdun Offshore Wind Farm Onshore Cable Connection and substation	While the proposed location of the As for Offshore Grids Project is not confirmed, information published by Bowdun Offshore Wind shows an indicative site location some 1-2km east of the Proposed Development. Based on that, the assessment of cumulative forestry impacts will be similar to that indicated for the SSEN Transmission Offshore Grids project above.	Based on the location indicated, the Bowdun Offshore Wind Farm Onshore Project is predicted to have significant effects on LCT 29 and 24 during construction and on LCT 29 only during operation. Significant visual effects are predicted from Viewpoint 1, 2 and 5 and sections of routes within the study area, during construction and operation, as well as from Viewpoint 3 during operation. In combination with the Proposed Development, significant	The onshore elements (HDVC building) associated with the Bowdun Offshore Wind Farm project, has the potential to result in a significant adverse impact on the setting of one scheduled monument, Clonckanshiel, Cairns, House and Field System (SM 4857) resulting from the introduction of the proposed HVDC building in close proximity to the SM. However, there is no predicted bare-earth visibility of the Proposed Development from	Based on the location indicated, the project is not predicted to have a significant effect upon Mergie LNCS nor other ecological resources. The assessment is as set out above for the Offshore Grids Project.	As indicated for the Offshore Grids Project.	As indicated for the Offshore Grids Project.	No traffic details are publicly available at present. Given the future projects will need to connect to the Proposed Development, it is unlikely that its traffic peak will coincide with that of the PD. The assessment is as set out above for the Offshore Grids project.	Construction schedules are not indicated to overlap, therefore the cumulative construction noise is not significant. No specific data is available to date. A detailed noise assessment is indicated to be conducted during the EIA. With sufficient mitigation, it is reasonable to assume noise levels would be no greater than the Proposed Development Effects of operational noise on NSRs unlikely to be significant.

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		cumulative effects are predicted for both LCT 29 and 24 during construction and LCT 29 during operation. Significant cumulative visual effects are predicted on visual receptors with parts of Fetteresso Forest during construction, and on visual receptors at Viewpoints 1 and 5, as well as parts of Fetteresso Forest and around Garrison Hill during operation.	Clockanshiels, Cairns, House and Field System and no predicted impact on the setting of the scheduled monument from the Proposed Development, and therefore no cumulative effect on settings in this regard.					Significant cumulative in-combination effects are therefore unlikely.
Quithel BESS – battery energy storage system 50mW capacity	The Quithel project is proposed on land outwith Fetteresso Forest. Significant forestry impacts are therefore unlikely, with the result that significant cumulative	The Quithel BESS is predicted to have significant effects on LCT 24 during construction due to the location of the BESS within this LCT. During operation, significant effects are predicted on both LCT 24 and 29. Significant	There are no predicted impacts on cultural heritage assets present along the Quithel shared access corridor from the Proposed Development., nor the Site proposed for the project.	A Screening Opinion adopted by Aberdeenshire Council for the Quithel project concluded that no EIA will be required. On the basis that the project appears to be smaller in scale to the Proposed	No significant cumulative effects upon ornithology either during the construction or once operational are expected.	As for the Offshore Grids Project above.	The screening opinion request notes that access for this development will be located outwith the Study Area and as such, no cumulative impacts are predicted.	The location indicated is sufficiently distant from the Proposed Development that there would be no significant noise effects from the Quithel project on the noise sensitive receptors selected to

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
	effects would not be predicted.	visual effects are predicted from Viewpoint 1 and localised sections of the minor road network south of the Site during construction and operation. In combination with the Proposed Development, significant cumulative effects are predicted for LCT 24 during construction and both LCT 24 and LCT 29 during operation. Significant cumulative visual effects are predicted on visual receptors at Viewpoint 1 and parts of the road network south of the Site during construction and operation.	No significant cumulative cultural heritage effects predicted during construction or once operational.	Development and that the setting is broadly similar, significant effects are considered unlikely. It follows that significant in-combination effects are considered unlikely.				inform the noise assessment of the Proposed Development. No cumulative effects are anticipated.
Craigneil Wind Farm	The windfarm is proposed on open unforested moorland north of the Proposed	Craigneil Wind Farm is predicted to have significant effects on LCT 29 during	The proposed windfarm is remote from the Proposed Development.	The original planning application for the windfarm submitted in	The Proposed Development is not predicted to have a significant effect upon	The proposed wind farm site is not hydrologically connected with the Proposed	The proposed wind farm would create an additional 72 vehicle	No noise effects are predicted in the vicinity of the noise sensitive receptors

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
	Development. No effects on forestry or forest operations are predicted.	construction and operation and LCT 24 during operation only. Significant visual effects are predicted from Viewpoint 3, the settlement of Rickarton and sections of Slug Road / A957 and tracks around Garrison Hill during construction and operation, as well as Viewpoint 5 during operation. In combination with the Proposed Development, significant cumulative effects are predicted for LCT 29 during construction and both LCT 29 and LCT 24 during operation. Significant cumulative visual effects are not predicted during construction. During operation, significant cumulative visual	No significant cumulative effects predicted for buried or upstanding archaeological remains or settings of designated heritage assets) during construction or once operational.	2018 did not predict a significant impact on non-avian ecological receptors, therefore it is likely that the updated layout of fewer, albeit larger turbines and reduced construction footprint also will result in no predicted significant effects. Given the location of the Proposed Development relative to the wind farm, and lack of predicted significant effects from either, based on the information available it is concluded that there is no predicted cumulative significant effect.	Schedule 1 raptors (notably, goshawk). Nevertheless, the proposed Craigneil Wind Farm was assessed for its potential to contribute to cumulative effects. No breeding sites of Schedule 1 goshawk were recorded and no disturbance/displacement effects were identified. Significant cumulative effect are unlikely therefore. Limited flight activity of Schedule 1 species were recorded - collision effects off the proposed wind farm were considered negligible and not significant. The Proposed Development does not in and of itself create a collision risk for Schedule 1	Development. Cumulative effects are not predicted.	movements on the A957 Slug Road. This increase in traffic is unlikely to have a significant impact on the operation of the road, given the existing recorded traffic levels and the capacity of that the road has. The PD will generate minimal traffic during the operational phase. The Applicant may wish to discuss any shared traffic management measures should the traffic flows coincide with the Proposed Development.	selected to inform the noise assessment of the Proposed Development. Cumulative effects are not anticipated.

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
		effects are predicted on some visual receptors along sections of track around Garrison Hill and from some tracks within Fetteresso Forest.			species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. No likely significant cumulative effect of operational effect predicted.			
Fetteresso Wind Farm Grid Connection / Access Corridor	While the proposed windfarm occupies land in Fetteresso Forest, no significant effects are predicted arising from the grid connection.	while the grid connection project is yet to be defined and a route selected, it is possible that there would be some significant effect on LCT24 during construction. Given its distance from the Proposed Development. Significant cumulative landscape and visual effects are unlikely.	No significant cumulative effects predicted for buried archaeological remains or settings of designated heritage assets (including with mitigation for a potential military crash site) during construction or once operational. Predicted possible significant impacts upon heritage assets	The ecological character of the grid connection corridor is broadly similar to that of the Proposed Development. The potential for and nature of effects are likely to be broadly similar to those set out above for the Glendye Wind Farm connection. Significant cumulative	Effects are likely to broadly similar to those set out for Glendye Wind Farm connection. Significant cumulative effects are unlikely.	As for Glendye Wind Farm connection.	As for Glendye Wind Farm connection.	As for Glendye Wind Farm connection.

	Forestry	Landscape and visual impact	Cultural heritage	Ecology	Ornithology	Hydrology	Transport and Access	Noise
			located along the site access corridor resulting from access track upgrades have been mitigated to avoid or reduce these predicted effects, and no significant residual effects are now predicted. The Fetteresso Wind Farm project is unlikely to have significant adverse setting impacts on the settings of designated heritage assets within the Outer Study Area, as the visibility of the proposed development would be largely, if not entirely, screened in views from the heritage assets within the Outer Study Area by intervening topography.	effects are unlikely.				

15.4.2 The following wind farm projects list below in Table 15.3 are only relevant to cumulative assessment for Ornithology. In summary, none of these projects are expected to have cumulative effects on Ornithology as:

- No qualifying and/or protected species and no significant populations of breeding birds of conservation interest have been identified in the Survey Areas, within which the Proposed Development and the other projects addressed here are proposed.
- No significant construction effects have been identified in connection with the Proposed Development and it follows that significant effects arising from the Proposed Development together with other projects in the vicinity are also unlikely, based on the information on these projects which is currently available.

15.4.3 Significant cumulative effects during the operation of the Proposed Development and other identified projects in the region (NHZ 12) are considered unlikely given that the Proposed Development does not in and of itself create a collision risk and that cumulative assessments carried out for regional wind farm projects do not predict significant effects.

Table 15.3: Summary of Likely Significant In-Combination Cumulative Effects for Ornithology

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
Aultmore wind farm (16 turbines; Application received)	The proposed wind farm lies beyond 10.5km from Fowlsheugh SPA and is therefore outwith the foraging distance of the SPA. There is no potential for cumulative effects as a result.	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. The proposed Aultmore wind farm includes development within potential disturbance distance of nesting Schedule 1 raptor (goshawk). Disturbance/displacement effects during construction of the windfarm are considered as being short-term and not significant with usual mitigation in place. No sites in addition to the Aultmore Wind Farm recorded goshawk as potentially breeding within 1km. Notwithstanding, the assessment presented here demonstrates that the Proposed Development will not give rise to a significant effects on goshawk. Taking that, and the unlikely effect from the	The proposed wind farm development lies beyond 10.5km from Fowlsheugh SPA. No consideration required for cumulative effects on SPA qualifying features.	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Baseline surveys – the cumulative total of goshawks recorded during flight activity surveys was 13 (the majority of which were during the spring (March/ April and involving single birds). All activity involved birds in flight. Only 3 birds were recorded flying through the wind farm at potential collision risk height, which produced a negligible annual collision estimate (<0.005 birds per year). The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	**Disturbance and displacement effects on Schedule 1 raptors**	**Collision risk and disturbance and displacement associated with qualifying features of the SPAs**	**Collision risk and disturbance and displacement effects on Schedule 1 raptors**
		proposed wind farm, the potential for significant cumulative effect is negligible.		disturbance/displacement impact. There is therefore no likely significant cumulative effect.
Cairds Hill wind farm (4 turbines; application received)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Goshawk recorded in flight activity surveys only, not breeding at Cairds Hill (from Non-technical summary). No significant effects predicted due to construction displacement/disturbance impacts. There is therefore no potential for cumulative effects.	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Schedule 1 species goshawk recorded in flight activity surveys only. Non-technical summary points to no predicted effects due to collision with turbines. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. There is therefore no likely significant cumulative operational effect.
Cairnborrow wind farm (5 turbines; operational)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects.	As above	As for construction effects assessed in the adjacent column.

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
Clashindarroch wind farm (18 turbines; operational)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Schedule 1 goshawk recorded during flight activity surveys. There was also one confirmed nest and a probable nest within the survey area. (conclusions as per Aultmore). No significant cumulative impacts are predicted.	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Schedule 1 goshawk recorded during flight activity surveys. The survey data led to predicted collision rates ranging from one goshawk every six years (95 % avoidance) to one every 32 years (99 % avoidance); mean of 0.13 per annum. This collision rate would not result in a meaningful effect on the annual survival rate for the population present in the region. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact As such, no likely significant cumulative effect is predicted.
Clashindarroch – 2 wind farm (14 turbines; consented)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects.	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects.

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
		One regularly used nesting area is located within 500m of the proposed wind farm. The wider area, within c. 2 km of the proposed development, supports a population of 2-3 pairs, which is considered to be of Regional scale importance for the species. The assessment of felling / construction-related disturbance and displacement of breeding goshawk is considered to be no greater than Low in the short-term, resulting in an effect significance level of Minor which is Not Significant. No significant effect of wind farm construction predicted on Regional population.		The collision risk to the goshawk population is considered to be Low in the long-term, resulting in an effect significance level of Minor, which is Not Significant (0.05 birds per annum). The relatively low level of estimated level of annual collision across those wind farms considered in the cumulative assessment (of which Clashindarroch at 0.13 per annum was the only one where a potential effect was considered), in combination with the lower predicted rate for the proposed development (0.05), would not result in a meaningful effect on the annual survival rate for the population present in the region and does not warrant any change to the assessment of collision risk for goshawk for the Clashindarroch II wind farm. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. As such, no likely significant cumulative effect is predicted.
Clashindarroch -western extension (22 turbines; application received)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects.	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects.

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
		Flight activity recorded with 2 pairs nesting within 2km of Site. Survey results and data obtained from Forestry Commission Scotland confirm the presence of two active territories within 2 km of the Site. Therefore, the local population is approximately 2.9 % of the monitored nests in North-East Scotland, and 1.5 % of the (2015 estimate) Scottish population. However, the Site is considered unlikely to be of value at the National Level given that it does not include suitable nesting or high-value foraging habitat for goshawk. Whilst there is potential for adverse effects on the local population of goshawk to occur because of development within the Site, the distribution of nesting and flight activity observed during survey work suggests that the risk of any effects occurring will be low. Therefore, the Site is unlikely to be of value to goshawk at any more than the Local level. Negligible construction effects only predicted and as such, no likely significant cumulative effect.		Collision risk model predicted 0.11 collisions per annum of Schedule 1 species goshawk. Effects of collision not predicted as significant at the regional level. The cumulative effect of collision mortality of goshawk is unlikely to be significant beyond the Local level. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. As such, no likely significant cumulative effect is predicted.
Coreen Hills wind farm (14 turbines; design/scoping stage)	As above	No ES/EIA	As above	No ES/EIA
Cormaud wind farm (14 turbines; design/scoping stage)	As above	No ES/EIA	As above	No ES/EIA

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
Craig watch wind farm (11 turbines; application received)	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. One goshawk breeding territory was recorded during the 2019 surveys, which represents >1% of both published regional NHZ population estimate (4% for NHZ12). Disturbance/displacement effects considered to be not significant (minor adverse). No likely significant cumulative effect of construction is predicted.	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Flight activity recorded - collision effect considered not significant (fewer than 0.5 goshawk/year; minor adverse). Cumulative collision risk estimates for goshawk are calculated at 0.194 – 0.95 birds per year, which represents up to 1.9% of the respective most recent breeding population estimate of NHZ12 (50 adults), and up to a 10.6% increase in annual baseline mortality of the NHZ12 breeding estimates. Overall cumulative collision mortality risks to goshawk are therefore considered to represent no more than a long-term, Low/ Medium magnitude of impact at the Regional NHZ population. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. No likely significant cumulative effect of operational effect is predicted.
Dorenell wind farm (59	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk).	As above	As for construction effects assessed in the adjacent column.

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
turbines; operational)		Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects		
Dorenell – extension (98 turbines; design/scoping)	As above	No information available	As above	No information available
Drumderg wind farm (16 turbines; operational)	As above	No information available	As above	No information available
Edintore wind farm (6 turbines; operational)	As above	No information available	As above	No information available
Fetteresso wind farm (10 turbines; consented)	Wind farm development predicted to have no effect on the SPA population due to disturbance/displacement effects [no SPA qualifying species recorded as using the site for foraging]. There is therefore no likely significant cumulative effect.	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Up to 5 territories of goshawk were located - impacts during construction predicted to be short-term of low/moderate negative magnitude and not significant. It is considered that a measurable effect on the local or regional population of goshawk is unlikely. Alternative stands of	The Proposed Development does not in and of itself create a collision risk for qualifying species of the SPAs considered in the assessment Wind farm development with low magnitude of predicted effect due to collision risk on herring gull. No specific mitigation measures required with no measurable effect on the local/regional population considered likely. There is therefore no potential for cumulative effects.	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Estimated collision of 1.8 birds/year representing 3.60% of the total NHZ 12 population estimate, and 0.66% of the total Scottish goshawk population. The value of 1.8 birds per annum provides the maximum cumulative estimate for this species. Following mitigation to remove mature forestry from the vicinity of

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
		forestry outside the proposed Wind Farm development will ensure continuity of goshawk nesting habitat across Fetteresso Forest. No sites assessed (wind farms within 25km of the Fetteresso wind farm) in addition to the proposed development recorded goshawk as potentially breeding within 1 km. As such no disturbance/displacement impacts are predicted in addition to those already anticipated for the proposed Wind Farm development, and therefore no significant cumulative impacts are predicted.		turbines, this collision rate is unlikely to be realised. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. Therefore, collision mortality is not considered to be significant at a regional population level and therefore no significant cumulative impact is predicted.
Garbet wind farm (7 turbines; consented)	Wind farm development lies beyond 10.5km from Fowlsheugh SPA. No consideration required for cumulative effects on SPA qualifying features.	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects	Wind farm development lies beyond 10.5km from Fowlsheugh SPA. No consideration required for cumulative effects on SPA qualifying features.	As for construction effects assessed in the adjacent column.
Glenbeg wind farm (4 turbines; design/scoping stage)	As above	No information available	As above	No information available
Glendye wind farm (26 turbines; consented)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its	As above	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
		potential to contribute to cumulative effects. No breeding pairs of goshawk recorded within 2km of the site. There is therefore no likely significant cumulative effect of construction.		potential to contribute to cumulative effects. Goshawk flight activity recorded (6 flights only)- considered as of local value. No flights were at potential collision height and as such, operational/collision effects are considered negligible & non-significant. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor cumulative disturbance/displacement impact. There is therefore no likely significant cumulative operational effect
Hill of Fare wind farm (16 turbines; operational)	Wind farm development predicted to have no effect on the SPA population due to disturbance/displacement effects [no SPA qualifying species recorded as using the site for foraging] . There is therefore no likely significant cumulative effect.	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects	The Proposed Development does not in and of itself create a collision risk for qualifying species of the SPAs considered in the assessment. The SPA species herring gull scoped out of assessment due to low flight activity at Hill of fare. There is therefore no potential for cumulative effects	The Proposed Development is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Goshawk flight activity recorded, however CRM recorded fewer than 0.1 birds assessed as colliding per year with species scoped out of the assessment. The Proposed Development does not in and of itself create a collision risk for Schedule 1 species considered in the assessment. Accordingly, the Proposed Development does not represent a source of cumulative collision risk nor

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	Disturbance and displacement effects on Schedule 1 raptors	Collision risk and disturbance and displacement associated with qualifying features of the SPAs	Collision risk and disturbance and displacement effects on Schedule 1 raptors
				cumulative disturbance/displacement impact. Therefore, there is no potential for cumluative effects.
Hill of Towie wind farm (21 turbines; operational)	Wind farm development lies beyond 10.5km from Fowlsheugh SPA. No consideration required for cumulative effects on SPA qualifying features.	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects	Wind farm development lies beyond 10.5km from Fowlsheugh SPA. No consideration required for cumulative effects on SPA qualifying features.	Goshawk not assessed.
Hill of Towie 2 (16 turbines; consented)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects	As above	As for construction effects assessed in the adjacent column.
Hunthill wind farm (4 turbines; consented)	As above	No information available	As above	No information available
Kildrummy wind farm (8 turbines; operational)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its	As above	As for construction effects assessed in the adjacent column..

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	**Disturbance and displacement effects on Schedule 1 raptors**	**Collision risk and disturbance and displacement associated with qualifying features of the SPAs**	**Collision risk and disturbance and displacement effects on Schedule 1 raptors**
		potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects		
Meikle Carewe wind farm (12 turbines; operational)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects	As above	As for construction effects assessed in the adjacent column.
Midhill wind farm Phase 1 (25 turbines; operational)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys, there is therefore no potential for cumulative effects	As above	As for construction effects assessed in the adjacent column.
Midhill wind farm Phase 2 (8 turbines; operational)	As above	The Proposed Development at Hurlie is not predicted to have a significant effect upon Schedule 1 raptors (goshawk). Nevertheless, the named wind farm development was assessed for its potential to contribute to cumulative effects. Since Schedule 1 species goshawk was not recorded during surveys,	As above	As for construction effects assessed in the adjacent column.

Project	Construction		Operation	
	Disturbance/displacement effects upon qualifying features of the SPAs	**Disturbance and displacement effects on Schedule 1 raptors**	**Collision risk and disturbance and displacement associated with qualifying features of the SPAs**	**Collision risk and disturbance and displacement effects on Schedule 1 raptors**
		there is therefore no potential for cumulative effects.		
Tullymurdoch wind farm (7 turbines; operational)	As above	No information available	As above	No information available
Welton of creuchie wind farm (4 turbines; operational)	As above	No information available	As above	No information available
Summary	No qualifying and/or protected species and no significant populations of breeding birds of conservation interest have been identified in the Survey Areas, within which the Proposed Development and the other projects addressed here are proposed; No significant construction effects have been identified in connection with the Proposed Development and it follows that significant effects arising from the Proposed Development together with other projects in the vicinity are also unlikely, based on the information on these projects which is currently available.		Significant cumulative effects during the operation of the Proposed Development and other identified projects in the region (NHZ 12) are considered unlikely given that the Proposed Development does not in and of itself create a collision risk and that cumulative assessments carried out for regional wind farm projects do not predict significant effects.	

15.5 Assessment of Likely Significant Interactive Effects

15.5.1 As defined above in paragraph 15.1, an interactive effect may arise where two or more impacts of different types affect the same receptor.

15.5.2 As presented within this EIAR and summarised in Error! Reference source not found. it is evident that the only interactive effects arising from the Proposed Development are where landscape impacts and visual impacts both occur in the same location. This would occur where receptors that experience a significant change in the view are also located within a landscape that will experience a significant effect.

15.5.3 These potential significant interactive effects have been identified at VP1 and VP5 and from locations along tracks within Fetteresso Forest and around Garrison Hill, and along sections of the minor road network south of the Site. These locations are location within the local area of either the Summits and Plateaux – Aberdeenshire or Coastal Farmed Ridges and Hills – Aberdeenshire Landscape Character Type (see **Figure 8.3a: Landscape Character Types**) where significant effects are predicted.

15.5.4 Visual impacts are a function of a change in the view that is experienced by receptors (people), whereas impacts upon landscape character are focused instead upon how a landscape's properties may be changed as a result of a development. Guidelines for Landscape and Visual Impact Assessment, 3rd Edition ('GLVIA3')[1] highlights the importance of distinguishing between effects on landscape, and effects on views. It defines the components of Landscape and Visual Impact Assessment (LVIA) as:

- "1. Assessment of landscape effects: assessing effects on the landscape as a resource in its own right;
- 2. Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people."

15.5.5 Therefore, visual impacts do not necessarily have a consequential impact upon landscape character and vice versa. A significant impact upon a landscape receptor does not mean that a significant impact will be experienced by the visual receptor.

15.5.6 Therefore, there are no interactive significant effects upon these receptors beyond the significant impacts in isolation that have already been identified.

15.6 Conclusion

15.6.1 Due to the nature and location of the Proposed Development and taking into account the Embedded and Applied mitigation, significant in-combination effects are anticipated only with respect to landscape and visual receptors. These cumulative effects are residual (post mitigation) and cannot be reduced further.

15.6.2 Interactive impacts that have been considered are those resulting from impacts on both landscape character and impacts on views and visual amenity. No significant interactive effects in respect of other environmental characteristics and receptors have been predicted.

[1] Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition.