

Netherton Hub 400 kV OHL Connection to New Deer and Peterhead: Tie-In

Environmental Appraisal Report Volume 1 Chapter 12: Cumulative Appraisal

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12. CUMULATIVE APPRAISAL

12.1 Introduction

12.1.1 This chapter provides an appraisal of the cumulative effects associated with the Proposed Development. There are two types of cumulative effects appraised in this chapter, which can be defined as follows:

- **In-combination effects:** the combination of effects from the Proposed Development and other developments (described as ‘cumulative developments’ in this Environmental Appraisal Report (EAR)) affecting the same receptor identified in this EAR; and
- **Effect Interactions:** the interaction and combination of different environmental effects arising from the Proposed Development that affect the same receptor identified in this EAR.

12.1.2 This chapter should be read in conjunction with the following:

- **Appendix 12.1: Long List of Cumulative Developments (Volume 3);** and
- **Figure 12.1: Cumulative Developments (Volume 2)**

12.2 Information sources

12.2.1 This appraisal is desk-based. Data and information have been collected from the following publicly available resources:

- Energy Consents Unit applications portal¹
- Aberdeenshire Council planning register²

12.3 Methodology

In-combination effects

12.3.1 The methodology for the in-combination effects appraisal can be separated into three stages:

- Stage 1: involves preparing a ‘long list’ of cumulative developments (**Appendix 12.1: Long List of Cumulative Developments (Volume 3)**) located within a 10 km radius of the Proposed Development. The 10 km radius has been selected based on the study areas used by the other topic chapters (**Chapters 5-11 (Volume 1)**) and is considered the greatest distance at which an in-combination effect could occur.
- Stage 2: the long list is reviewed to determine which cumulative developments should be scoped into the in-combination effects appraisal to create a ‘short list’. The justification for the short list is provided in **Table 1 of Appendix 12.1: Long List of Cumulative Developments (Volume 3)**. The criteria for determining which cumulative developments should be considered is based on their scale, nature and distance from the Proposed Development. For example, the proposed Netherton Hub substation that overlaps with the Site boundary of the Proposed Development has been scoped into the appraisal, whereas the construction of an agricultural shed 3.7 km away has not been appraised because it is of insufficient scale and too far from the Proposed Development for cumulative effects to be likely.
- Stage 3: the cumulative developments within the ‘short list’ are then appraised by each topic in this EAR to determine any potential cumulative in-combination effects and the requirement for any mitigation.

12.3.2 **Appendix 12.1: Long List of Cumulative Developments (Volume 3)** presents the long list of cumulative developments and indicates which cumulative developments have been scoped into the in-combination appraisal.

Effect interactions

12.3.3 The methodology for the effect-interactions appraisal is undertaken in two stages:

¹ The Scottish Government. Energy Consents Unit. Available (online) at: [Scottish Government - Energy Consents Unit](#)

² Aberdeenshire Council. View and comment on planning applications. Available (online) at: [View and comment on planning applications - Aberdeenshire Council](#)

- Stage 1: all receptors in the EAR are screened to determine if there is potential for these receptors to be exposed to more than one type of effect during either the construction or operational phase. For example, a residential receptor being exposed to noise and visual effects concurrently. These receptors are termed 'common receptors' and are taken forward to Stage 2.
- Stage 2: any common receptors are appraised to determine if there is an effect interaction and potential magnification of effect.

12.4 In-combination effects

12.4.1 **Table 12.1:** presents a summary of the in-combination effects identified in **Chapters 5-11 (Volume 1)** and proposes any additional mitigation measures beyond those identified for the Proposed Development, which will be employed to manage these potential cumulative effects.

Table 12.1: In-combination Effects

Topic	Potential Cumulative Effects	Mitigation Measures
Landscape and Visual	Chapter 5: Landscape and Visual (Volume 1) sets out in detail the in-combination assessment relating to this topic. In summary it concludes that cumulative effects would be greatest around the Netherton Hub area, where the Proposed Development would be experienced alongside existing, consented and in-planning transmission, substation, converter station and battery energy storage infrastructure. Significant cumulative effects are predicted locally, particularly where multiple infrastructure elements are visible together or in close succession. Overall, the landscape and visual assessment concludes that the Proposed Development would give rise to localised significant landscape and visual effects, particularly during construction and from receptors closest to the Netherton Hub and associated overhead line infrastructure. However, these effects would be contained within a landscape already influenced by energy and transmission infrastructure and would not result in widespread or fundamental change to the wider landscape character of the area.	Embedded mitigation through careful landscape design, siting, and alignment has been implemented to limit the spatial extents of effect.
Cultural Heritage	There are no anticipated cumulative effects in relation to heritage receptors within the Site or study area. The only common receptor between the Proposed Development and cumulative developments would be the Easterton of Lenabo Airship Station, Scheduled Monument (SM13679; HA12). Chapter 6: Cultural Heritage (Volume 1) concluded that due to the presence of intervening woodland and topography, no significant setting effects are predicted and as such is not expected to have a significant cumulative effect.	No additional mitigation is proposed for the Proposed Development as no significant cumulative effects have been identified.
Ecology	Chapter 7: Ecology (Volume 1) concluded that the appraisal of residual effects on protected areas, priority habitats, bats, badger, otter, water vole and pine marten would be negligible or sufficiently low. As such, the Chapter concluded that no cumulative effects are anticipated.	No additional mitigation is proposed for the Proposed Development as no significant cumulative effects have been identified.
Ornithology	Chapter 8: Ornithology (Volume 1) identified two cumulative developments as having potential to produce significant cumulative effects with the Proposed Development, associated with collision risk. These cumulative developments are the Netherton Hub 400 kV OHL Connection to New Deer and	Installation of Bird Flight Diverters (BFD) on the OHL of the Proposed Development is recommended. It is

Topic	Potential Cumulative Effects	Mitigation Measures
	Peterhead: Rebuild (Long List ID: 20) and the Beauly to Blackhillock to New Deer to Peterhead 400 kV OHL (Long List ID: 23).	confirmed that the Beauly to Blackhillock to New Deer to Peterhead 400 kV OHL (Long List ID: 23) includes BFD as mitigation and it is anticipated that Netherton Hub 400 kV OHL Connection to New Deer and Peterhead: Rebuild (Long List ID: 20) will also include BFD as mitigation.
Hydrology, Hydrogeology, Geology and Soils	No direct or indirect environmental effects with regards to Chapter 9: Hydrology, Hydrogeology, Geology and Soils (Volume 1) have been identified. It is also assumed that effective 'source' controls for each cumulative development and good practice methodology during construction would be implemented. Furthermore, the various construction programming and timeframes of activities that would be anticipated to occur across various cumulative developments further reduce the probability that water quality and flow issues would be coincident across the same catchments, or that the severity of any incidents would be aggravated by activities elsewhere.	No additional mitigation is proposed for the Proposed Development as no significant cumulative effects have been identified
Forestry and Land Use	There are no anticipated cumulative effects in relation to native woodland as there will be no native woodland removal as part of the Proposed Development, as presented in Chapter 10: Forestry and Land Use (Volume 1) . Due to the negligible land take expected for commercial forestry, cumulative effects will be negligible. Agricultural land take caused by the Proposed Development is very minimal, therefore any contribution to the decline of agricultural land on a national scale is negligible.	No additional mitigation is proposed for the Proposed Development as no significant cumulative effects have been identified.
Noise Environment	Chapter 11: Noise Environment (Volume 1) identifies potential cumulative impacts in relation to six cumulative developments including Netherton Hub substation (Long List ID: 05) and Beauly to Blackhillock to New Deer to Peterhead 400 kV OHL (Long List ID: 23). As the noise environment appraisal adopted a worse-case scenario approach and all impacts are expected to be localised, cumulative construction impacts are not expected to exceed those already identified in the noise appraisal. No operational noise cumulative effects are expected either due to the nature of the other cumulative developments or their distance to the Proposed Development. With regards to Beauly to Blackhillock to New Deer to Peterhead 400 kV OHL, a review of the worst-affected receptor found cumulative wet noise would remain below the Tier 1 screening criterion.	N/A

12.5 Effect interactions

Stage 1

- 12.5.1 The first stage of the effect interactions appraisal is to identify any common receptors in the EAR. The only topics where there is potential for effect interactions are landscape and visual and noise environment. Common receptors identified in these two appraisals are residential receptors located within 300 m of the Site during the construction phase and within 100 m of the Site during the operation phase.

Stage 2

- 12.5.2 During construction, residential receptors within 300 m of the Site are likely to experience periods where noise levels exceed the 65 decibel (dB) threshold during the weekday daytime period and exceed the 55 dB threshold during the weekend daytime period. As outlined in **Chapter 11: Noise Environment (Volume 1)**, these exceedances are likely to occur during vegetation clearance and felling, access and enabling works, and occasionally during the establishment of foundations and erection of the towers.
- 12.5.3 During these periods of exceedances, residential receptors also have the potential to experience temporary disruptions to their views, caused by construction vehicles, machinery and plant. It is likely therefore, that there will be occasions when these receptors experience a significant effect interaction caused by noise disturbance and visual disruption. However, it is expected that these effect interactions will be short-term and temporary in nature, reducing the overall significance of effect.
- 12.5.4 During operation, the conductors selected for the overhead line will generate an operational noise impact classified as negligible or low to no adverse impact. These impacts may be experienced by residential receptors within 100 m of the Site. For those same receptors, there is potential for them to experience a significant adverse effect associated with visual amenity impacts. It is not expected that these effects will interact in such a way that this would change the overall level of effect individually considered in the relevant chapters, given how minor the noise impact is expected to be.

12.6 Summary

- 12.6.1 The in-combination effects appraisal has identified the potential for significant cumulative effects in relation to Landscape and Visual, and Ornithology. For Landscape and Visual, the Proposed Development would give rise to localised significant effects, particularly during construction and from receptors closest to the Netherton Hub and associated overhead line infrastructure. However, these effects would be contained within a landscape already influenced by energy and transmission infrastructure and would not result in widespread or fundamental change to the wider landscape character of the area. It is expected that ornithological cumulative effects can be minimised by the application of mitigation measures, (including the use of BFDs).
- 12.6.2 There is also potential for construction cumulative effects associated with noise and vibration, although these are not expected to exceed the appraisal of effects presented in **Chapter 11: Noise Environment (Volume 1)**.
- 12.6.3 Minor to negligible in-combination effects are expected for the remaining topics: cultural heritage, ecology, hydrology, hydrogeology, geology & soils, and forestry.
- 12.6.4 There is the potential for significant effect interactions during construction and operation associated with noise and visual impacts. During construction, these effects are expected to be localised, short-term and temporary. During operation, these effects are expected to be no greater than the effects reported in the individual appraisals.