

Volume 2: Chapter 12 – Summary of Effects

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Appendices (Volume 4 of this EIAR)

There are no appendices associated with this Chapter.

Figures (Volume 3 of this EIAR)

There are no figures associated with this Chapter.

12. SUMMARY OF EFFECTS

12.1 Introduction

- 12.1.1 The findings of the Environmental Impact Assessment (EIA) Report for the Proposed Development are presented within the technical assessments contained within **Volume 2, Chapters 7-10** of this EIA Report (EIAR). The significance of these environmental effects has been assessed using criteria defined in the topic chapters. Unless the technical assessments state otherwise, the significance of effects has been categorised as major, moderate, minor or negligible, with effects being assessed of 'major' or 'moderate' considered to be significant effects in the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('The EIA Regulations').
- 12.1.2 As discussed in **Volume 2, Chapter 5: EIA Process and Methodology**, in this EIAR, mitigation has been developed and organised in a three-tier hierarchy as follows:
- Embedded Mitigation: design stage mitigation;
 - Applied Mitigation: standard/best practice for environmental topics and/or construction industry mitigation; and
 - Additional Mitigation: site-specific or bespoke mitigation identified through the impact assessments undertaken for each environmental topic of the EIAR.
- 12.1.3 Each technical chapter of this EIAR details the measures required to mitigate any identified Significant effects, and a summary of those mitigation measures is provided in **Volume 2, Chapter 13: Schedule of Environmental Mitigation**. Any remaining Significant effects following the implementation of additional mitigation measures are known as 'residual Significant effects'.
- 12.1.4 The purpose of this Chapter is to provide a summary of Significant environmental effects identified within **Volume 2, Chapters 7-10** of this EIA Report, with a more focused account of any residual Significant effects and cumulative Significant effects. All predicted Significant effects (pre- and post-mitigation) are summarised below in **Table 12.1 Summary of Significant Effects**.

12.2 Summary of Significant Effects

- 12.2.1 Prior to the application of additional mitigation measures, Significant effects are predicted in relation to the following topics:
- Landscape and Visual Amenity (**Chapter 7**);
 - Cultural Heritage (**Chapter 8**); and
 - Noise and Vibration (**Chapter 10**).
- 12.2.2 Prior to the application of additional mitigation measures, Significant effects are not predicted in relation to the following topic:
- Ornithology (**Chapter 9**).
- 12.2.3 Following the application of additional mitigation, residual Significant effects remain for the following topics:
- Landscape and Visual Amenity (**Chapter 7**); and
 - Cultural Heritage (**Chapter 8**).
- 12.2.4 The sections below present a summary of the Significant residual effects identified by each of the two topics noted immediately above, as applicable. Further detail on the nature of these residual Significant effects is found in the corresponding chapters.
- Landscape and Visual Amenity*
- 12.2.5 This section presents a summary of the significant residual effects and cumulative effects predicted on landscape and visual amenity. Owing to the complexity of the assessment and considerations associated with determining the significance of effects on specific landscape and visual receptors, landscape character and views experienced by

people, it is strongly recommended to refer to **Volume 2, Chapter 7: Landscape and Visual Amenity** and its associated appendices for additional information.

Landscape

- 12.2.6 The construction of the Proposed Development would have both physical and perceptual effects on the landscape character of Landscape Character Type (LCT) 387: Dipslope Farmland and LCT 382: Lowland Hill Ranges. Both LCTs are considered to be of **Medium** sensitivity. **Moderate (Significant)** effects on landscape character would occur no more than 1 km from the Proposed Development, in the area between Myreton of Claverhouse and Balkello within LCT 387, and across the southern slopes of Craigowl Hill within LCT 382. Such Significant effects would be the result of physical changes to landscape features such as disturbance to ground cover and construction (or dismantling) of steel lattice towers and access tracks, which would result in a **Medium** magnitude of change locally, in both LCTs, reducing to a low magnitude of change for more distant areas (beyond 1 km from the Proposed Development). These Significant effects also take into account the perceptual effects as a result of visibility of construction activities (such as the movement of vehicles and machinery) and partially constructed steel lattice towers would also occur within these LCT. Beyond 1 km of the construction works, effects on landscape character would reduce to **Minor (Not Significant)** due to the decreased perceptibility of construction activity.
- 12.2.7 The Sidlaw Local Landscape Area (LLA) is located approximately 0.5 km to the northwest of the Proposed Development. There would be no physical effects arising from the construction of the Proposed Development on the Sidlaw LLA. Perceptual effects on the landscape of the Sidlaw LLA may be experienced as a result of construction activity. Construction activity would be experienced in close to distant views from the southeastern extents of the Sidlaw LLA, where it would appear largely backclothed by distant landform. Given the temporary nature of construction effects, and that effects would be perceptual and not physical, it is considered that effects on the special qualities of the LLA during construction would be **Minor (Not Significant)** and would not affect the integrity of this local landscape designation.

Visual

- 12.2.8 The construction of the Proposed Development would have effects on a range of visual receptors within the Visual Receptor Areas (VRAs) in the study area, including residents, road users and recreational receptors broadly between the settlement of Inveraldie, the northern edge of Dundee, and Craigowl Hill. Eight of the nine VRAs within the study area are considered to be of **High** sensitivity for residential receptors and **Medium** sensitivity for other receptors (eg road users and recreational receptors). VRA 5 (Ark Hill, Balkello, Craigowl and Gallow Hills) does not have any residential receptors but is deemed to be of **High** sensitivity for recreational receptors in the Sidlaw Hills.
- 12.2.9 **Moderate or Major (Significant)** effects on views and visual amenity would affect receptors within approximately 1 km of the Proposed Development (eg VRA 1 (Balkemback), VRA 2 (Balnuith), VRA 3 (Templeton, Gallowhill, Myreton of Claverhouse, and Inveraldie), VRA 4 (Balluderon and Balkello), VRA 5 (Ark Hill, Balkello, Craigowl and Gallow Hills), and VRA 8 (Tealing and Kirkton of Tealing)), where close-to-middle distance views of construction activity would be available, and would result in **Medium** or **High** magnitude of change. A lower magnitude of change is expected from VRA 5 (Ark Hill, Balkello, Craigowl and Gallow Hills), but given the **High** sensitivity of receptors in this VRA, effects are still expected to be significant for the closer receptors. Significant effects would be the result of the visibility of construction activity including the erection of steel lattice towers, creation and upgrading of access tracks, vehicle movements and lighting in hours of darkness. Construction activities associated with the dismantling of the Alyth – Tealing 275 kV Overhead Line (OHL) as part of the Proposed Development would be most visible in VRA 2 (Balnuith), VRA 6 (Prieston and Coldstream), and the eastern extents of VRA 1 (Balkemback).
- 12.2.10 From more distant receptors beyond 1 km (eg VRA 7 (North of Tealing, Huntingfaulds, Todhills, and Cotton of Brightly) and VRA 9 (Downfield)), intervening features including vegetation and buildings would partially or fully screen construction works, particularly ground level activity. The perceptibility of construction activity would reduce as the distance between the Proposed Development and receptors increases, with many views limited to the erection of steel lattice towers (or dismantling of the Alyth – Tealing 275 kV OHL) and threading of conductors.

Cultural Heritage

12.2.11 A summary of the likely predicted significant effects on cultural heritage of the Proposed Development, as described within **Volume 2, Chapter 8: Cultural Heritage**, is set out below.

Inner Study Area

12.2.12 The assessment identified and evaluated cultural heritage present within an Inner Study Area, which comprised of the horizontal Limit of Deviation (LOD) adopted for the Proposed Development which has been used for the identification of heritage assets that could be directly affected by the Proposed Development, both during construction and / or replacement of OHLs and during works required for site access. The LOD comprises a normal 100 m either side of proposed sections of new OHL (including where reconductoring and temporary towers are proposed), where existing OHL alignments are proposed for dismantling, and along the routes of new and to-be-upgraded tracks or paths (both temporary and permanent).

12.2.13 There was one Scheduled Monument (SM) identified in the Inner Study Area: an embankment associated with the Dundee and Newtyle Railway (SM 6123). The monument comprises part of a railway incline, surviving as an earthwork, cutting, and associated stone-built engine house. As a Scheduled Monument, the embankment is of national heritage value and high sensitivity.

12.2.14 There is one Category C Listed Building (LB) within the Inner Study Area. The Balkemback Farmhouse (LB 17449), and wider farm, which first appear on mid-19th century maps and are still in use today. As a Category C Listed Building, the farmhouse is of local heritage value and low sensitivity.

12.2.15 28 non-designated heritage assets have been identified within the Inner Study Area. Of these, 19 were recorded in the Angus Historic Environment Record (HER), and nine have been identified on historic maps and / or aerial photographs consulted as part of the desk-based assessment.

12.2.16 The Proposed Development, including both OHL and access elements, has been designed to avoid any direct impacts on Scheduled Monuments that lie in close proximity to the Site. Where Scheduled Monuments lie within the Proposed Development horizontal LOD, these would be marked out with a suitable stand-off buffer to be agreed in advance with Historic Environment Scotland (HES).

Outer Study Area

12.2.17 The assessment also identified and evaluated cultural heritage present within an Outer Study Area, which comprised of an area extending 3 km from the Site boundary used in combination with a Zone of Theoretical Visibility (ZTV) to identify heritage assets with statutory or non-statutory designations that could have their settings affected by the Proposed Development.

12.2.18 A total of nine Scheduled Monuments lie within the Outer Study Area, excluding the Dundee and Newtyle Railway embankment (SM 6123). These include prehistoric settlement remains (SM 7059 and SM 90299), prehistoric funerary and ritual monuments (SM 2868, SM 6145 and SM 6562), a Pictish cross-slab (SM 159), a 16th-century dovecot (SM 90298), and the industrial remains of a railway (SM 5967 and SM 6123). The closest of these Scheduled Monuments to the Site is the Neolithic stone circle at Balkemback Cottages (SM 2868), located approximately 200 m to the east of the proposed new OHL alignment.

12.2.19 There are 48 Listed Buildings recorded within the Outer Study Area: two Category A listed, 26 Category B listed, and 20 Category C listed. Excluding the Category C listed Balkemback Farmhouse (LB 17457), which is located within the Inner Study Area, the nearest Listed Building is the category C South Balluderon Walled Garden (LB 17457), which is located approximately 500 m to the west of the proposed new OHL alignment. The closest Category A Listed Building is the South Balluderon Farmstead (LB 17458), comprising the steading, stackyard walls, an implement shed, field trough, and walled mill dam. The farmstead is located within the same complex of buildings as the above walled garden, approximately 500 m to the west of the proposed new OHL alignment.

Assessment of Residual Cumulative Effects

12.2.20 The assessment of cumulative effects on heritage assets is based upon consideration of the effects of the Proposed Development on the settings of designated heritage assets within the Outer Study Area (which includes the Inner Study Area), in addition to the likely effects of cumulative developments. The Chapter provides a cumulative assessment of the Proposed Development with other reasonably foreseeable SSEN Transmission and 3rd party developments.

12.2.21 The cumulative construction effects arising from the Proposed Development in combination with other Project-Related SSEN Transmission Developments, and other foreseeable projects are not predicted to be significant. However, the cumulative operational effects arising from the Proposed Development in combination with other foreseeable projects are not predicted to be significant. Project-Related SSEN Transmission Developments are predicted to result in an operational impact of moderate significance (significant in EIA terms) to the setting of the Balkemback Cottages Stone Circle (SM 2868).

Ornithology

12.2.22 A summary of the likely predicted significant ornithology effects of the Proposed Development, as described within **Volume 2, Chapter 9: Ornithology**, is set out below:

- Desk-based studies and field surveys were carried out in and around the Proposed Development over respective 'Study Areas' to establish baseline conditions and the species and populations present.
- Habitat loss arising from the construction of the Proposed Development is unlikely to result in adverse impacts upon any bird species. Any impacts are likely to be negligible and not significant. Population reductions due to habitat loss, displacement and / or collision mortality are also likely to be minimal. Where "hot spots" of flight activity have been identified mitigation, by way of bird flight diverters, has been proposed. Any impacts are predicted to be negligible.
- The contribution of adverse effects accrued by the Proposed Development to regional populations would be undetectable and so cumulative effects of the Proposed Development with existing and planned developments in the region are judged as being unlikely to have a significant effect on existing bird populations. Overall, it is concluded that the Proposed Development would not have a significant effect on bird populations.

Noise and Vibration

12.2.23 A summary of the likely predicted significant noise and vibration effects of the Proposed Development, as described within **Volume 2, Chapter 10: Noise and Vibration**, is set out below:

- Evaluation of the baseline was made through a combination of desk-based study, field survey and consultation.
- Significant adverse effects are predicted during the construction phase and cumulatively prior to Additional Mitigation being applied. However, with mitigation applied, in the form of a Construction Noise Management Plan where the residual effects were Not Significant.

12.3 Summary of Effects

12.3.1 **Table 12.1: Significant Effects** summarises the likely predicted significant effects as a result of the Proposed Development, with reference to relevant sections of the project, where appropriate.

Table 12.1: Significant Effects

Topic / Receptor	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effects and Significance (Post Mitigation)
Landscape and Visual Amenity			
Construction			
Landscape			
Landscape Character Types			
LCT 387: Dipslope Farmland (Tealing Unit)	Moderate (Significant) locally within the LCT (within no more than 1 km of the Proposed Development) and Minor (Not Significant) for remaining parts of the LCT within the study area.	None proposed.	Moderate (Significant) locally within the LCT (within no more than 1 km of the Proposed Development) and Minor (Not Significant) for remaining parts of the LCT within the study area.
LCT 382: Lowland Hills Ranges	Moderate (Significant) locally within the LCT (within approximately 1 km of the Proposed Development) and Minor (Not Significant) for remaining parts of the LCT.	None proposed.	Moderate (Significant) locally within the LCT (within approximately 1 km of the Proposed Development) and Minor (Not Significant) for remaining parts of the LCT.
Landscape Designations			
Sidlaw Hills LLA	Minor (Not Significant)	None proposed.	Minor (Not Significant)
Visual			
Visual Receptor Areas			
VRA 1	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 2	Major (Significant)	None proposed.	Major (Significant)
VRA 3	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 4	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 5	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 6	Major (Significant)	None proposed.	Major (Significant)
VRA 7	Minor (Not Significant)	None proposed.	Minor (Not Significant)
VRA 8	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 9	Minor (Not Significant)	None proposed.	Minor (Not Significant)
Operation			

Topic / Receptor	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effects and Significance (Post Mitigation)
Landscape			
Landscape Character Types			
LCT 387: Dipslope Farmland	Moderate (Significant) locally within the LCT and Minor (Not Significant) beyond this area. There will be very localised beneficial effects for a section of the LCT around Balnuith and Prieston.	None proposed.	Moderate (Significant) locally within the LCT and Minor (Not Significant) beyond this area. There will be very localised beneficial effects for a section of the LCT around Balnuith and Prieston.
LCT 382: Lowland Hills Ranges	Moderate (Significant) locally within the LCT (extending north to Balkello Hill and Craigowl Hill) and Minor (Not Significant) for remaining parts of the LCT.	None proposed.	Moderate (Significant) locally within the LCT (extending north to Balkello Hill and Craigowl Hill) and Minor (Not Significant) for remaining parts of the LCT.
Landscape Designations			
Sidlaw LLA	Minor (Not significant)	None proposed.	Minor (Not significant)
Visual			
Visual Receptor Areas			
VRA 1	Major (Significant)	None proposed.	Major (Significant)
VRA 2	Minor (Not Significant) – Beneficial Major (Significant)	None proposed.	Minor (Not Significant) – Beneficial Major (Significant)
VRA 3	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 4	Moderate (Significant)	None proposed.	Moderate (Significant)
VRA 5	Minor (Not Significant)	None proposed.	Minor (Significant)
VRA 6	Minor (Not significant) – Beneficial Major (Significant)	None proposed.	Minor (Not significant) – Beneficial Major (Significant)
VRA 7	Minor (Significant)	None proposed.	Minor (Significant)
VRA 8	Minor (Not Significant)	None proposed.	Minor (Not Significant)
VRA 9	Minor (Not Significant)	None proposed.	Minor (Not Significant)
Cumulative – Construction			
Landscape			
Landscape Character Types			

Topic / Receptor	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effects and Significance (Post Mitigation)
LCT 387: Dipslope Farmland (Tealing Unit)	Significant effects	None proposed.	Significant
LCT 382: Lowland Hills Ranges	Significant effects	None proposed.	Significant
Landscape Designations			
Sidlaw LLA	Not significant	None proposed.	Not Significant
Visual			
Visual Receptor Areas			
VRA 1	Significant effects	None proposed.	Significant
VRA 2	Significant effects	None proposed.	Significant
VRA 3	Significant effects	None proposed.	Significant
VRA 4	Significant effects	None proposed.	Significant
VRA 5	Not significant	None proposed.	Not significant
VRA 6	Significant effects	None proposed.	Significant
VRA 7	Not significant	None proposed.	Not significant
VRA 8	Not significant	None proposed.	Not significant
VRA 9	Not significant	None proposed.	Not significant
Cumulative – Operation			
Landscape			
Landscape Character Types			
LCT 387: Dipslope Farmland	Significant effects	None proposed.	Significant
LCT 382: Lowland Hills Ranges	Significant effects	None proposed.	Significant
Landscape Designations			
Sidlaw Hills LLA	Not significant	None proposed.	Significant
Visual			
Visual Receptor Areas			
VRA 1	Significant effects	None proposed.	Significant

Topic / Receptor	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effects and Significance (Post Mitigation)
VRA 2	Significant effects	None proposed.	Significant
VRA 3	Significant effects	None proposed.	Significant
VRA 4	Significant effects	None proposed.	Significant
VRA 5	Not significant	None proposed.	Not significant
VRA 6	Not significant	None proposed.	Not significant
VRA 7	Not significant	None proposed.	Not significant
VRA 8	Not significant	None proposed.	Not significant
VRA 9	Not significant	None proposed.	Not significant
Cultural Heritage			
Construction			
Possible accidental direct effect to the Dundee and Newtyle Railway Embankment (SM 2848)	Major (Significant)	CH1: Avoidance of Scheduled Monuments	Not significant
Operation			
Operational impact to the setting of the Balkemback Cottages Stone Circle (SM 2868).	Moderate adverse	None proposed.	Moderate adverse residual effect
Cumulative			
Cumulative impact to the setting of the Balkemback Cottages Stone Circle (SM 2868).	Moderate adverse	None proposed.	Moderate adverse residual effect
Ornithology			
Construction			
All ornithological features	Not significant	No additional mitigation required	Not Significant
Operation			
All ornithological features	Not Significant	No additional mitigation required	Not Significant
Cumulative			
All Ornithological features	Not Significant	No additional mitigation required	Not Significant

Topic / Receptor	Effect Significance (Pre-Mitigation)	Additional Mitigation	Residual Effects and Significance (Post Mitigation)
Noise and Vibration			
Construction			
All Noise features	Significant effects	NV:1 CNMP – Measures to include active time of noisiest equipment over the working hours, reduce quantity of simultaneous equipment, and prioritise noisiest activity in daytime.	Not Significant
Operation			
All Noise features	Not Significant	No additional mitigation required	Not Significant
Cumulative			
All Noise features	Significant effects	NV1: CNMP – Measures to include active time of noisiest equipment over the working hours, reduce quantity of simultaneous equipment, and prioritise noisiest activity in daytime. Awareness of simultaneous operations of cumulative developments to manage traffic effects.	Not Significant