Scottish & Southern Electricity Networks

TRANSMISSION

Environmental Impact Assessment (EIA) Report

LT383 Alyth to Tealing Overhead Line (OHL) 400kV Upgrade

November 2024

VOLUME 2: CHAPTER 14 – CUMULATIVE EFFECTS

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.

14. CUMULATIVE EFFECTS

14.1 Introduction

Staged Approach

14.1.1 The assessment of cumulative effects is a requirement of the EIA Regulations, which state that likely significant effects should cover cumulative effects of the proposed development, as well as the cumulation of effects with other existing and/or approved developments. As discussed in Chapter 5, Section 5.5 (Volume 2), the approach to cumulative assessment includes both interactive cumulative effects (intra) and in combination cumulative effects (inter).

14.1.2 The approach to cumulative assessment has been refined following issue of the Scoping Report, with a staged approach to cumulative assessment having been developed, as follows:

1. **Interactive cumulative assessment for the Proposed Development (intra):** The interactive effects caused by the combination of a number of effects from the Proposed Development on key receptors such as communities, designated areas or ecosystems. This includes effects at site preparation and earthworks, construction and operational phases. These collectively may cause a more significant effect than individually;
2. **Interactive cumulative assessment for associated SSEN developments (intra)** (those SSEN Pathway to 2030 projects that are in geographical proximity to the Proposed Development): The interactive effects caused by the combination of a number of effects from the Proposed Development and associated SSEN developments on a particular receptor. This includes effects at site preparation and earthworks, construction and operational phases; and
3. **In combination (inter) cumulative assessment for other SSEN and 3rd party developments**): The combined effects from the Proposed Development, associated SSEN developments and other reasonably foreseeable developments. This includes effects at site preparation and earthworks, construction and operational phases.

14.1.3 The reasoning behind the addition of Stage 2 (the Proposed Development and associated SSEN developments) is that SSEN are committed to consider the cumulative effects of all developments proposed as part of the Pathway to 2030 Holistic Network Design, and therefore assessing these as 'intra' is appropriate. Those projects listed in Table 144-1 and Table 144-2 and shown, indicatively, on Figure 5.1 (Volume 3) are of relevance and in geographical proximity to the Proposed Development.

14.1.4 The potential for Stage 3 (in-combination cumulative effects (inter)), has been considered in relation to other reasonably foreseeable development which includes approved EIA development (and non-EIA development where appropriate), or those where a screening or scoping report has been submitted.

Reasonably Foreseeable Developments

14.1.5 The Scoping Report included a list of developments, in Section 3.8, Table 3-2 'Details of Developments for Consideration in Cumulative Assessment', for consideration in the cumulative assessment. All those projects listed in the Scoping Report have been assessed, however the Kintore-Tealing 400 kV project has subsequently been included, with assessment limited in geographical scope to the general locality where the proposed line would connect to the proposed Tealing (Emmock) substation. It should be noted that the SPEN TKUP Lines (Uprate to 400kV operation) have not been included in this list given the distance of this project (approximately 40km south-west) from the Proposed Development. An assessment of the cumulative impacts associated with the SPEN TKUP Lines has been carried out as far as possible within the Tealing to Westfield 400kV OHL Upgrade EIA.

14.1.6 Other 3rd party developments have been identified, beyond those listed in the Scoping Report, throughout the assessment process and have been included within the assessment where relevant as listed in Section 14.3. The list of reasonably foreseeable developments identified in the Scoping Report extended out to approximately 8 km. During the assessment process it has been considered acceptable to assess those reasonably foreseeable developments within 3 km. This has been based on professional judgement.

14.1.7 Two additional developments beyond the 3 km have been included due to their size and nature: The Tealing Solar Energy Park (ECU Ref: ECU00004882) and the Tealing Battery Storage Farm (ECU Ref: ECU00003354). These developments (identified in the Scoping Report as 'Solar Land around Gagie Kellas') were originally screened for the need for EIA as one project, each with an operating capacity of 80 MW. The two projects have been taken forward separately, with the battery storage farm now consented (December 2023) and the solar park application submitted. Due to the size of these two developments together, a cautious approach has been taken to include them in the cumulative assessment.

14.1.8 The final list of developments to be considered in the cumulative effects assessment was frozen three months prior to publication to allow sufficient time to compile the EIA Report.

Scoping Opinion

14.1.9 No additional projects were identified in the Scoping Opinion for inclusion in the cumulative assessment. The ECU recommended that the cumulative assessment include not only approved EIA development, but also EIA and non-EIA OHL or substation infrastructure that is associated with SSEN ASTI Transmission projects. As referenced in paragraph 14.1.5, the impacts of the wider ASTI projects have been assessed as part of the interactive (intra) cumulative assessment (Stage 2) for associated SSEN developments within this chapter.

14.2 Interactive (intra) Cumulative Assessment

14.2.1 Cumulative effect interactions are the interactive effects caused by the combination of a number of effects on a particular receptor, which may collectively cause a more significant effect than individually.

Stage 1: Interactive (intra) Cumulative Assessment for the Proposed Development

14.2.2 For Stage 1, the approach to the assessment of effect interactions considers the changes in baseline conditions at common sensitive receptors (i.e. those receptors that have been assessed by more than one technical topic) due to the Proposed Development. The assessment is based upon significant residual effects only (moderate or major significant effects).

14.2.3 An overall assessment of the cumulative effects on identified common sensitive receptors has been made using professional judgement and the technical information provided in Chapters 7 to 13 (Volume 2).

14.2.4 As detailed in Chapter 15: Summary of Effects (Volume 2), no residual significant effects have been identified for the Proposed Development. It is therefore concluded that no significant effect interactions are anticipated.

Stage 2: Interactive (intra) Cumulative Assessment for Associated SSEN Developments

14.2.5 As identified in Chapter 5: EIA Approach and Methodology (Volume 2), SSEN are committed to consider the cumulative effects of all developments proposed as part of the Pathway to 2030 Holistic Network Design. The approach adopted is to consider those Pathway to 2030 projects within geographical proximity to the Proposed Development which include:

- Tealing - Westfield 275 kV OHL upgrade;
- Tealing (Emmock) substation;

- Kintore - Tealing 400 kV Connection (limited in geographical scope to the general locality where the proposed line would connect to the proposed Tealing (Emmock) substation); and
- Alyth-Tealing and Tealing-Westfield OHL Tealing (Emmock) substation tie-ins and associated tower dismantling.

14.2.6 All of these projects are at different stages of design development. The Tealing-Westfield 275 kV OHL upgrade has been running concurrently with the Proposed Development and therefore detailed information is available on the predicted effects which has been reflected in the assessment set out below. None of the other projects have submitted an EIA Report at the time of writing, with only the Tealing (Emmock) substation having progressed to Scoping stage. The Stage 2 cumulative assessment therefore has been based on the information available and the professional judgment of technical topic specialists.

14.2.7 Each technical topic has considered these developments within the respective chapter (Chapters 7 to 13 (Volume 2)) and this has been collated below in Table 144-1 and their location shown, indicatively, on Figure 5.1 (Volume 3).

Table 144-1 Stage 2: Interactive (intra) cumulative assessment for Associated SSEN Developments

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Tealing - Westfield 275 kV OHL upgrade	A	Tealing-Westfield / Glenrothes	Upgrade of approximately 38 km of an existing 275 kV OHL between Tower 182 (west of Tealing Substation) and the licence boundary with Scottish Power Energy Networks (SPEN) (Westfield/ Glenrothes) (midspan between Towers 66 and 65) to enable operation at 400 kV.	EIAR in preparation (alongside the EIAR for the Proposed Development Energy Consents Unit reference: ECU00005168	Ecology	No significant residual effects.	The insignificant nature of effects of this scheme, also an OHL upgrade with only slight impacts on habitats and associated fauna, similarly to the slight effects of the Proposed Development, suggests that cumulative effects would remain slight and insignificant. Therefore, no likely significant cumulative effects.	None.
					Ornithology	No significant residual effects.	No likely significant cumulative effects.	None.
					Forestry	Forestry present, no significant residual effects.	Potential for minor cumulative effects.	Mitigation provided local to forestry impact.
					Cultural Heritage	No signficant residual effects and no physical impacts on any common assets.	No likely significant cumulative effects.	None.
					Traffic and Transport	No significant residual effects.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							moderate effects (worse case all developments are constructed at the same time).	
					Hydrology, Hydrogeology and Soils	No significant residual effects.	Construction of the Tealing-Westfield OHL may cause additional sediment laden surface run-off, increased risk from pollution (chemical and oil spills) and increased aquatic habitat disruption. Impacts are thought to be associated with the construction phase, with only minor cumulative effects during operation from maintenance. Therefore, no likely significant cumulative effects.	None.
					Noise and Vibration	No significant residual effects.	Cumulative noise with the proposed upgraded Tealing to Westfield 400 kV OHL has been considered. The Proposed Development and the Tealing to Westfield OHL are 1.6 km apart at the nearest point. Cumulative noise is predicted to be negligible	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							and therefore not significant.	
Tealing (Emmock) substation	B	Near Emmock Road, Tealing	Construction of a new 400 kV substation near Tealing between Kintore and Tealing (see below).	Scoping Report submitted 2nd July 2024 Angus Council Planning reference: 24/00431/EIASCO	Ecology	Not available.	Footprint of development entirely within agricultural fields of low ecological value. The small loss of agricultural fields to this substation, and negligible permanent loss to the Proposed Development, is of no consequence given the great abundance of such fields throughout the region. Therefore, no likely significant cumulative effects.	None.
					Ornithology	Not available.	The Scoping Report determined that effects on ecological receptors within and using the Site are anticipated and have some potential to be significant. However, in terms of cumulative effects, no likely impact pathways have been identified for European Sites as a result of this proposed development. There is potential significant effects	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							from loss of habitat and habitat modification, or disturbance to lapwing as a result of this proposed development, though the habitats present are considered to have lower BTO wader sensitivity ratings. Negligible cumulative effects expected. Therefore, no likely significant cumulative effects.	
					Forestry	Not available.	No forestry present therefore no likely significant cumulative effects.	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects.	None.
					Traffic and Transport	Not available	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							constructed at the same time).	
					Hydrology, Hydrogeology and Soils	Not available.	Construction of the Tealing (Emmock) substation may cause additional sediment laden surface run-off, increased risk from pollution (chemical and oil spills) and increased aquatic habitat disruption. Impacts are thought to be associated with the construction phase, with only minor effects during operation from maintenance. therefore, no likely significant cumulative effects.	None.
					Noise and Vibration	Not available.	Tealing (Emmock) substation is a source of noise in the Study Area associated with the Proposed Development. The Proposed Development is assessed for worst-case noise in wet conditions. In these conditions, the background noise is raised due to rainfall, therefore,	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							operational noise from Tealing (Emmock) substationwill be less prominent and likely to have a negligible impact on NSRs when considered cumulatively with the operational noise from the Proposed Development. Receptors that are within 500 m of the Proposed Development are at least 2 km from Tealing (Emmock) substation. These cumulative receptors are unlikely to exceed wet background noise with contributions from Tealing Substation and the Proposed Development. The worst-case noise effects of Tealing (Emmock) substation are assessed in dry conditions, where noise from the Proposed Development is negligible. Therefore cumulative noise in dry and wet conditions is not significant.	

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Kintore – Tealing 400kV Connection	C	Kintore-Tealing	Construction of a new 400 kV OHL between Kintore and Tealing. and export route to areas of demand.	In Preparation – no screening or scoping submitted at time of writing.	Ecology	Nott available.	Like the Proposed Development, this scheme appears to largely affect agricultural fields with limited impact on plantation. Habitat loss would be similarly slight compared to the surrounding resource, with similarly slight impacts on fauna, with no impacts likely to be significant. Therefore, no likely significant cumulative effects.	None.
					Ornithology	Not available.	Information not available. However, avoidance and mitigation measures similar to those to be implemented by the Proposed Development will be implemented and no likely residual significant effects. Therefore, no likely significant cumulative effects	None.
					Forestry	Not available.	Forestry present, potential for minor cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
					Cultural Heritage	Not available,	No physical impacts on any common assets, no likely significant cumulative effects..	None.
					Traffic and Transport	Not available.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	Not available.	Construction of associated tie-ins and tower decommissioning may lead to increased risk from pollution. Some minor disruption to the earthworks may be required for tower decommissioning. No significant cumulative effects likely with standard mitigation in place. Therefore, no likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
					Noise and Vibration	Not available.	The East Coast 400 kV OHL is a potential source of cumulative noise. Triple Upas are conductors used for the cumulative analysis. Receptors were considered where noise from the East Coast 400 kV OHL line could cause cumulative impact with the Proposed Development. As a Tier 1 assessment which compares noise to a 34 dBA limit, receptors were assessed where the combination of wet noise from the triple Upas of East Coast 400 kV OHL and the Triple Upas of the Proposed Development reaches 34 dB(A) is 290 m. There are 2 NSRs that are within this range. Results are shown in Appendix 13.7 (Volume 4). At Haughend Farm Cottage, the noise from the existing East Coast 400 kV OHL is 40 dB, which would already exceed 34 dB(A) without contributions from the	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							Proposed Development. The addition of the Proposed Development increases the level by 1 dB, which is not a perceptible change. A 3 dB increase would be considered a perceptible change in noise level. After a Tier 2 assessment, no adverse impact is indicated at either NSR (Haughend Farm Cottage and Haughend Farm). Cumulative noise from the East Coast 400 kV OHL is therefore deemed as not significant.	
Alyth -Tealing OHL Tealing Emmock substation tie-ins and associated tower dismantling	D	Tealing	Construction of a new OHL originating at some point on the existing OHL from the Alyth-Tealing OHL between Tower 680 and Tower 682, as well as the Proposed Development between Tower 180 and Tower 182 (likely Tower 181), connecting to the new proposed Tealing (Emmock) substation.	In Preparation – no screening or scoping submitted at time of writing. Energy Consents Unit reference: ECU00005204	Ecology	Not available.	Towers are located within agricultural fields of poor ecological value. Any impacts would be at a small scale and highly localised so are unlikely to be significant.Considering the affected habitat is agricultural fields with very limited loss compared to the surrounding resource, with similarly slight impacts on fauna, with no impacts likely to be significant.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
			This will enable the removal of approximately 1.5 km of redundant OHL between Towers 680/682 and the existing Tealing substation, and the use of the redundant towers east of tower 182 to provide a connection between the proposed Tealing (Emmock) substation and the existing Tealing substation."				Therefore, no likely significant cumulative effects.	
					Ornithology	Not available.	Information not available. However, avoidance and mitigation measures similar to those to be implemented by the Proposed Development will be implemented and no likely residual significant effects. Therefore, no likely significant cumulative effects.	None.
					Forestry	Not available.	No forestry present therefore no likely significNT cumulative effects.	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects.	None.
					Traffic and Transport	Not available.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							case all developments are constructed at the same time).	
					Hydrology, Hydrogeology and Soils	Not available.	Construction of associated tie-ins and tower decommissioning may lead to increased risk from pollution. Some minor disruption to the earthworks may be required for tower decommissioning. Therefore, no likely significant cumulative effects	None.
					Noise and Vibration	Not available.	The noise from the proposed OHLs has been estimated at each NSR, and the total cumulative noise predicted from existing OHLs. Four NSRs have shown to require further analysis. All other NSRs predict negligible impact. Balnuith/ Seventeen Acres shows potential impact, being under 200m from the East Emmock-Tealing tie back. Noise in wet	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							conditions from this OHL span is predicted to exceed 34 dB(A), which is the Tier 1 criteria of a National Grid TGN(E)322 assessment of OHL operational noise. A Tier 2 assessment considers the combination of wet and dry noise dependent on the likelihood of rainfall. Upon further inspection of the noise contribution, a large proportion of wet noise contribution comes from the existing Tealing-Kintore 275 kV OHL. Tier 2 assessment of the OHL noise at this NSR shows that dry noise is low enough for there to be no adverse impacts expected. Noise from the proposed East TT and West TT Emmock-Tealing tie backs is negligible. The three other NSRs are situated in Jeanfield (Jeanfield Farm, Jeanfield Steadings, Jeanfield Farmhouse). An evaluation	

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							of worst-case noise contributions has been performed for existing and proposed OHLs. All noise impacts at these locations are predicted to be dominated by the noise from the Tealing-Westfield 400 kV OHL upgrade, which will be assessed separately. NSRs at Jeanfield will not be impacted by tie-ins, tie-backs, or diversions and therefore predicted impact is negligible. Operational noise has been assessed and any potential significant effects identified would result from cumulative noise from existing or proposed future OHLs. Operational noise from the tie ins, tie backs and temporary diversions is predicted to be negligible. Therefore, no significant effects are likely for operational noise.	

14.3 Stage 3: In-combination (inter) Cumulative Assessment

14.3.1 In-combination effects are the combined effect of the Proposed Development, the associated SSEN Developments (Table 144-1) and other reasonably foreseeable developments (taking into consideration effects at the stages of site preparation and earthworks, construction and operation).

14.3.2 As discussed the the 'Reasonably Foreseeable Developments' section above, the following proposed developments have been considered as part of this Stage 3 in-combination (inter) cumulative assessment:

- Muir of Pert Energy Storage Facility;
- Moatmill Bridge Tealing Energy Storage Facility;
- Tealing Solar Energy Park;
- Tealing Battery Energy Storage Farm;
- Fithie Energy Park Battery Energy Storage System (BESS);
- Ark Hill Wind Farm Extension;
- Balnuith Farm BESS (Tealing); and
- Myreton BESS.

14.3.3 Each technical topic has considered these developments within the respective chapter (Chapters 7 to 13 (Volume 2)) and this has been collated below in Table 144-2 and shown, indicatively, on Figure 5.1 (Volume 3).

Table 144-2 Stage 2: In-combination (inter) cumulative assessment for Other SSEN and 3rd Party Developments

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Muir of Pert Energy Storage Facility	E	Muir of Pert Farm, Tealing, Dundee DD4 0QL	Energy storage facility up to 50 MW, compound of equipment, access, fencing, security cameras, landscaping, tree planting, demolition of derelict buildings and other associated works.	Proposal of Application (PAN) Approved Subject to Conditions 12th July 2023 and EIA Screening Request submitted and determined EIA Not Required 11th July 2023 Angus Council Reference (PAN): 23/00442/PAN Angus Council Reference (Screening): 23/00479/EIASCR	Ecology	Not available.	No significant effects identified through Screening Request, no likely significant cumulative effects.	None.
					Ornithology	Not available.	No significant effects identified through Screening Request, no likely significant cumulative effects.	None.
					Forestry	Not available.	No forestry present therefore no likely significant cumulative effects.	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects.	None.
					Traffic and Transport	Not available.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	Not available.	Potential minor cumulative effects associated with the construction phases of both developments due to their relative proximity. Impacts could include increased sediment-laden runoff and contaminated runoff into water	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							receptors. No likely significant cumulative effects.	
					Noise and Vibration	Not available.	The construction of the energy storage facility has the potential to have a cumulative noise impact due to the equipment and increased traffic. If the construction works are coincidental, once a contractor has been appointed, a detailed construction noise management plan must be updated to include working times, activities and a schedule. There is the potential for activities that are associated with the construction of the energy storage facility that take place concurrently to raise the noise above either the 65 dB daytime noise limit or the 55 dB evening and weekend limit at the Alyth-Tealing OHL NSRs. Therefore, it is possible for cumulative construction noise to result in major effect which is significant. Cumulative construction noise is required to be controlled through an updated assessment by the Principal Contractor, and a CNMP. Therefore, with the appropriate mitigation, residual effects are likely to be minor and not significant. The battery storage containers will be fitted with air conditioning units and the	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							operation of the facility, as a whole, may create noise. While recognising there are other noise generating uses in the vicinity of the site, there are a small number of properties which may be adversely affected by noise from the development. Worst-case results from the proposed energy storage facility will occur in dry conditions, which is where the OHL noise is at a minimum. In wet conditions, the OHL noise is elevated. In these conditions, the background noise is increased due to the rainfall, which would make the effects of the other developments such as the energy storage facility likely to have an impact on the relevant receptors. The site is 3 km from the OHL, where NSRs relevant to the site will have negligible impacts from the OHL. Therefore, cumulative impacts due to the Energy Storage System would be low and considered to have negligible impact.	
Moatmill Bridge Tealing Energy Storage Facility	F	Land at Moatmill Bridge, Tealing	Energy storage facility up to 50 MW, compound of	PAN Approved Subject to Conditions 3rd May 2023	Ecology	Not available.	Given its small size and the agricultural nature of the affected land indicated there will likely be no llikely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
			equipment, meter building, fencing, security cameras, new belt of native trees and landscaping	Angus Council reference: 23/00254/PAN	Ornithology	Not available.	The proposed development site would measure around 3.8 ha and comprises agricultural land. Situated approximately 1.46 km from the Proposed Development. No likely significant cumulative effects	None.
					Forestry	Not available.	No forestry present therefore no likely significant cumulative effects.	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects.	None.
					Traffic and Transport	Not available.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	Not available,	Potential minor cumulative effects associated with the construction phases of both developments due to their relative proximity. Impacts could include increased sediment-laden runoff and contaminated runoff into water receptors. No likely significant cumulative effects	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
					Noise and Vibration	Not available.	Potential for cumulative construction and operational noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts). The site is 3 km from the OHL, where NSRs relevant to the site will have negligible impacts from the OHL. Therefore, cumulative impacts due to the Energy Storage System would be low and considered to have negligible impact.	None.
Tealing Solar Energy Park	G	Near Duntrune, DD4 0PR	Application for Installation of a solar energy park of approximately 100 MW and all associated infrastructure.	Application submitted 17th November 2023 Energy Consents Unit reference: ECU00004882	Ecology	According to the Preliminary Ecological Appraisal, the habitats within the boundary of this development are agricultural and of low ecological value. Other ecological features of greater value were found but beyond the boundary of the project.	No likely significant cumulative effects.	None.
					Ornithology	The ecology documents submitted with this application do not refer to ornithology. However, solar farms generally have limited impacts on bid species, and habitat measures	No likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
						described in the Biodiversity Management Plan for this project are likely to benefit bird species.		
					Forestry	No forestry present	No likely significant cumulative effects.	None.
					Cultural Heritage	No physical impacts on any common assets.	No physical impacts on any common assets, no likely significant cumulative effects..	None.
					Traffic and Transport	Information from the Transport Statement has been included in the cumulative transport assessment.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	No EIA completed, however from assessment completed, significant effects are considered unlikely.	No likely significant cumulative effects.	None.
					Noise and Vibration	No EIA completed, however from assessment completed, significant effects are considered unlikely.	Potential for cumulative construction and operational noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts).	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							The site is 4 km from the OHL, where NSRs relevant to the site will have negligible impacts from the OHL. Therefore, cumulative impacts due to the Energy Park would be low and considered to have negligible impact.	
Tealing Battery Energy Storage Farm	H	Land to the north-east of Gagie Home Farm, Duntrune, DD4 OPR	Application for Installation of an 80MW Battery Energy Storage Facility and associated infrastructure	Application Consented 13th December 2023 Energy Consents Unit reference: ECU00003354	Ecology	According to the Preliminary Ecological Appraisal for this project, it is sited on an arable field of low ecological value. No evidence of protected species was recorded.	No likely significant cumulative effects.	None.
					Ornithology	The Preliminary Ecological Appraisal Report for this project states that the site is of low value to birds and is likely to support only common and widespread species. A variety of habitat enhancement measures are proposed that will benefit bird species, including grassland/wildflower establishment, and planting of native shrubs and hedgerow.	No likely significant cumulative effects.	None.
					Forestry	No forestry present	No likely significant cumulative effects.	None.
					Cultural Heritage	No physical impacts on any common assets.	No physical impacts on any common assets, no likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
					Traffic and Transport	Information from the Transport Statement has been included in the cumulative transport assessment	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	No EIA completed, however from assessment completed, significant effects are considered unlikely.	No likely significant cumulative effects.	None.
					Noise and Vibration	Not available.	Potential for cumulative construction and operational noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts). The site is 4 km from the OHL, where NSRs relevant to the site will have negligible impacts from the OHL. Therefore, cumulative impacts due to the Energy Storage Farm would be low and considered to have negligible impact.	None.
Fithie Energy Park BESS	I	Land to the north-west of	Construction and Operation of up to 1400	Screening Report	Ecology	Not available	No likely significant cumulative effects.	None.
					Ornithology	Not available	The closest Special Protection Areas are the Firth of Tay and the Eden	None

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
		Tealing Substation	MW battery energy storage system and associated infrastructure	submitted **23rd February 2024** Energy Consents Unit reference: ECU00005034			Estuary, which are approximately 8 km away. Pink-footed goose and greylag are the two qualifying species of relevance. Ornithological surveys are underway, however given the relatively small site area and a lack of ornithological interest features within the Site it is not considered likely that significant adverse effects will arise as a result of the proposed Development and therefore no likely significant cumulative effects.	
					Forestry	Not available.	No forestry present therefore, no likely significant cumulative effects.	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects..	None.
					Traffic and Transport	Not available.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	Not available.	No likely significant cumulative effects predicted due to relative distance.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
					Noise and Vibration	Not available.	Potential for cumulative construction and operational noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts). The site is approximately 2 km from the OHL, where NSRs relevant to the BESS site will have negligible impacts from the OHL. Therefore, no likely significant cumulative effects.	None.
Ark Hill Wind Farm Extension	J	Approximately 2.5 km north-east of Alyth-Tealing	Extension of Ark Hill Wind Farm consisting of the erection of four wind turbines measuring a maximum height of 89.5 m (to blade tip) with a rotor diameter of 71	Application validated 21st October 2021, awaiting decision Angus Council reference: 21/00765/EIAL • .	Ecology	Not signficant resicual effects	No likely significant cumulative effects.	None.
					Ornithology	Ornithology - Published 28th September 2021	Due to the small size of the site, the habitat present and the ornithological survey results, it is considered that the integrity of qualifying species for the Loch of Lintrathen or Loch Kinnordy SPAs, within the specified distances as recommended by SNH would not be impacted upon. No likely significant cumulative effects.	None.
					Forestry	No forestry present.	No forestry present therefore no likely significant cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
			m, the formation of access tracks and associated hardstanding areas, set down areas, construction compound, electrical substation and borrow pit		Cultural Heritage	No physical impacts on any common assets.	No physical impacts on any common assets, no likely significant cumulative effects..	None.
					Traffic and Transport	Information from the Transport Statement has been included in the cumulative transport assessment	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	No significant residual effects identified.	No likely significant cumulative effects predicted due to relative distance.	None.
					Noise and Vibration		Potential for cumulative construction noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts). The Ark Hill Wind Farm Extension is over 2.5 km from the nearest Alyth-Tealing NSR and deemed to have negligible impact over the distance noise will propagate (assuming this development meets its own noise limit criteria). Therefore, no likely significant cumulative effects are predicted.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
Balnuith Farm BESS (Tealing)	K	Balnuith Farm, Tealing, DD4 0RE	The construction and operation of a battery energy storage facility for the storage of up to a 249 MW of electricity together with associated infrastructure, substation, security fencing, CCTV, security lighting and landscaping.	Screening Opinion issued 6th September 2023 Energy Consents Unit reference: ECU00004803	Ecology	Not available. .	No likely significant effects identified ithrough Screening Request, no likely cumulative effects.	None.
					Ornithology	Given the agricultural use of the site, the location of the development, and the opportunity to create landscape features, provide landscape buffers and habitat improvements, it is not considered that any impacts would be significant in the context of the EIA regulations.	It is considered that potential disturbance is likely to arise during the construction phase; however, the operational phase is unlikely to create a level of disturbance greater than the disturbance from the current farming practices onsite. Given the agricultural use of the site, the location of the development, and the opportunity to create landscape features, provide landscape buffers and habitat improvements, it is not considered that any impacts would be significant in the context of the EIA regulations No significant effects identified through Screening Request, no likely significant cumulative effects.	None.
					Forestry	Not available.	No forestry present therefore no likely cumulative effects.	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects..	None.
					Traffic and Transport	Not available	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and	Mitigation through co-ordination of construction traffic management plans

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	Not available.	No likely significant cumulative effects predicted due to relative distance.	None.
					Noise and Vibration	Not available.	Potential for cumulative construction and operational noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts). The site is 2 km from the OHL, where NSRs relevant to the BESS site will have negligible impacts from the OHL. Therefore, cumulative impacts due to the BESSwould be low and considered to have negligible impact.	None.
Myreton BESS	L	Land to the south of Tealing Substation	A proposed battery energy storage system with an installed capacity of around 750 MW	Screening Report submitted 22nd February 2024 Energy Consents Unit	Ecology	Not available. .	No significant effects identified ithrough Screening Request, therefore, no likely significant cumulative effects.	None.
					Ornithology	Not available.	It is considered that the potential environmental impacts of the proposed BESS on nearby 'sensitive areas,' would not be 'significant', subject to the proposed assessments and	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
				reference: ECU00005053			mitigations set out in the screening report. No likely significant cumulative effects.	
					Forestry	Not available.	No forestry present therefore no likely significant cumulative effects..	None.
					Cultural Heritage	Not available.	No physical impacts on any common assets, no likely significant cumulative effects.	None.
					Traffic and Transport	Not available.	Cumulative assessment has been undertaken in Chapter 11 (Volume 2) for all Intra Developments and indicates that there is the potential for cumulative moderate effects (worse case all developments are constructed at the same time).	Mitigation through co-ordination of construction traffic management plans will manage any cumulative effects.
					Hydrology, Hydrogeology and Soils	Not available.	No likely significant cumulative effects predicted due to relative distance.	None.
					Noise and Vibration	Not available.	Potential for cumulative construction and operational noise due to the relative proximity of the two developments (refer to Muir of Pert Energy Storage Facility above for further details on the nature of potential cumulative impacts).	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Environmental Assessment Topic	Residual Significant Effects (if known)/ information from any available sources on likely significant effects	Cumulative Assessment	Additional Mitigation
							The site is 2 km from the OHL, where NSRs relevant to the BESS site will have negligible impacts from the OHL. Therefore, cumulative impacts due to the BESS would be low and considered to have negligible impact.	

14.4 Conclusion

14.4.1 This cumulative assessment chapter has considered both intra and inter cumulative effects and determined that there are no interactive or in combination cumulative effects associated with the Proposed Development.