Environmental Impact Assessment (EIA) Report

LT384 Tealing to Westfield Overhead Line (OHL) 400 kV Upgrade

November 2024

VOLUME 2: CHAPTER 10 - FORESTRY

Figures (Volume 3 of this EIA Report)

- Figure 10.1:Dronley Wood: Tree Management Proposals

Appendices (Volume 4 of this EIA Report)

There are no Appendices associated with this chapter.

10. FORESTRY

10.1 Introduction

10.1.1 The potential impact resulting from the construction and operation phases of the Proposed Development on forestry are addressed in this EIA Report chapter. Forestry in this context considers commercial and non-commercial woodland. Other arboricultural features of groups of trees and individual trees are identified to illustrate impacts and opportunities, but this assessment is focused on forestry.

10.1.2 Commercial forests are dynamic and change through landowner activities and natural events. This would include the changes to, for example, felling programmes and compositional changes that follow from changes to management objectives or response to biotic or abiotic factors.

10.1.3 The environmental services provided by woodlands in relation to landscape character and habitats are recognised within the Landscape and Ecology chapters of the EIA Report (Chapters 7 and 8 (Volume 2), respectively) and the topics should be considered together.

10.2 Assessment Methodology and Significance Criteria

Scope of the Assessment

10.2.1 Resilience is the ability of a network to withstand a shock event and then return to its former purpose and quality. In this context, management of vegetation in proximity to the energy network considers growth and potential failure of trees. Assessment is based on this principle, recognising that a risk-based approach should be followed. In particular, the opportunity for maintaining broadleaf trees within the existing and expanded corridor was considered, on a case-by-case basis, and retention of trees within the corridor is presented within Section 10.3.

Extent of the Study Area

10.2.2 The study area adopts a 90 m wide corridor (45 m from the centre line of the OHL) and incorporates the wayleave corridor, of 80m, for the existing OHL. Where the Proposed Development passes through forestry, the adjacent or continuous crop was further considered in relation to extended felling for windfirmness. Assessment of tree growth stage and condition may lead to proposals to extend vegetation management beyond the existing corridor, and any extended tree felling proposals and subsequent restocking will, subject to landowner agreement, be presented within the EIA Report. Access routes, within forestry areas, were assessed for their impact on woodland structure and the opportunities created by improved access for woodland operations. A full BS5837:2012 arboricultural impact assessment (AIA) of trees and tree groups adjacent to access routes has been scoped out, as per Section 7.6 of the Scoping Report.

Consultation Undertaken to Date

10.2.3 The Applicant consulted Scottish Forestry regarding the Proposed Development. Scottish Forestry is the Scottish Government agency responsible for policy, support and regulation of the forestry sector in Scotland. A written response was received on 5th July 2024, which notes earlier discussion with the Applicant's woodland advisor. Scottish Forestry advised that:

- the EIA Report includes a specific chapter on forestry, providing detailed information on the types and areas of forestry to be felled,

- the Scottish Government's Policy on Control of Woodland Removal[1] is followed and adopts guidance on implementation,
- any requirement for extended management felling is recognised and will also require permission from Scottish Forestry separately from the planning application, and,
- compensatory planting requirements may themselves be subject to EIA.

10.2.4 A Scoping Opinion in relation to forestry was received from Fife Council. The response recognises that the route of the OHL passes through Pitmedden Wood[2] and suggests that removal of woodland should result in compensatory planting. Detailed consideration of the effects on Pitmedden Wood is provided in Section 10.5 of this chapter.

10.2.5 Fife Council requested in the Scoping Opinion that where development is required within or above existing areas of woodland protection, plans should be provided to demonstrate that all necessary steps have been taken to ensure woodland and tree protection (with reference to BS5837:2012). Whilst AIA was scoped out, the risk-based tree management strategy employed currently, and to be applied to the increased wayleave, affords suitable protection to retained trees. Within woodland, protection measures will meet the UK Forestry Standard, addressed in Section 10.5.14.

10.2.6 In their Gate Check response (dated 29th October 2024) Fife Council reiterated their request for a full AIA report. The resilience survey provided a suitable approach to AIA; all trees, tree groups and woodland potentially affected by the Proposed Development were identified in the resilience survey reported in this chapter. The EIA did not follow the process of BS5837, which had been scoped out, as it is not possible to modify the OHL alignment to preserve individual trees and therefore it would not have yielded additional value to mitigate impacts by design. Neither is categorisation of trees significant to establishing replacement numbers. The planting of compensatory areas of forestry will establish trees, as whips and transplants, at relatively close spacing, and will exceed the tree replacement ratios quoted in the response of Fife Council. Forestry is not subject to AIA in the normal course of land management and the primary concern of this assessment was to forestry assets to establish compensatory measures.

Method of Baseline Data Collation

10.2.7 An initial baseline of forestry receptors was derived from Scotland's environmental web[3] and Scottish Forestry map viewer[4]. These digital mapping tools have enabled identification of woodland within the National Forest Inventory (NFI). The NFI definition of woodland is a minimum area of 0.5 ha with trees possessing, or with the potential to achieve, tree crown cover of more than 20% of the ground. Within the NFI some woodlands are identified as native woodlands. The Native Woodland Survey of Scotland (NWSS) provides a baseline survey of all native woodlands (of minimum 0.5 ha), nearly native woodlands and plantations on ancient woodland sites in Scotland. A further subset of these woodlands is contained within the Ancient Woodland Inventory (AWI) of Scotland, which identifies ancient woodland, long established woodland of plantation origin (LEPO) and semi-

[1] Forestry Commission Scotland (2009) The Scottish Government's Policy on Control of Woodland Removal: https://www.forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal

[2] The Scoping Opinion references Pitmedden Forest rather than Pitmedden Wood. Both exist and are close geographically, however the OHL passes through Pitmedden Wood (as marked on OS mapping) and therefore for clarity, references to Pitmedden Forest have been adjusted to Pitmedden Wood throughout.

[3] Scotland's Environment (2024) Scotlands Environment Map (online) Available at: https://www.environment.gov.scot/maps/scotlands-environment-map/ [Accessed: July 2024]

[4] Scottish Forestry (2024) Scottish Forestry Map Viewer (online) Available at: https://www.forestry.gov.scot/support-regulations/scottish-forestry-map-viewer [Accessed: July 2024]

natural woodlands. However, the AWI is based on woodlands over 2 ha. NFI, NWSS and AWI are identified within the baseline conditions.

10.2.8 Subsequently, the baseline was enhanced by provision of a resilience survey of the existing OHL, undertaken in the field by third party utility arborists, in March 2024. Data were shared in the form of site maps and field records of tree species, top heights and separation from the existing OHL, with some additional field notes. The survey data was more comprehensive than the scoped assessment to identify individual arboricultural receptors. The baseline data were within a 45 m wayleave of the centre line of the OHL, that is to provide a 90 m survey corridor. This represents the expanded wayleave of the Proposed Development. Beyond the survey corridor, consideration was given to the need for expanded management felling of neighbouring woodland to mitigate the risk of windthrow.

10.2.9 The field data are presented under Section 10.3, with trees and forestry identified in relation to tower intervals.

Determining Magnitude of Change and Sensitivity of Receptors

10.2.10 Descriptions of magnitude of impact, sensitivity of the receptor and significance of effect that are used in this forestry assessment have been developed for the Proposed Development.

10.2.11 There is no universally accepted guidance to assess forestry receptor sensitivity, in part because trees are dynamic, and stage of tree growth may influence sensitivity criteria. Professional judgement and familiarity with forestry EIA for the energy sector has been used to develop the receptor sensitivity values in Table 10-1.

Table 10-1: Sensitivity criteria for forestry and trees

Sensitivity value	Sensitivity criteria
High	Woodland Sites of Special Scientific Interest; semi-natural ancient woodland; ancient and veteran trees
Medium	Native woodland, long-established woodland of plantation origin; mid-rotation commercial woodland, established parkland trees
Low	Recently established woodland (yet to reach canopy closure); woodland shrubs, low-stature amenity tree planting, poorly performing/ pest-damaged woodland
Negligible	Commercial woodland at economic rotation (clear-felling) stage; diseased trees or woodland

10.2.12 In the UK there is a strong presumption against permanent deforestation unless it addresses other environmental concerns, or where it would achieve significant and clearly defined additional public benefits. In Scotland such deforestation is dealt with under 'the Scottish Government's Control of Woodland Removal Policy'[5]. The purpose of the policy is to provide direction for decisions on woodland removal in Scotland.

10.2.13 Any removal of woodland has an impact but there is no absolute guidance on impact magnitude. In part, this is because impacts may be influenced by the scale of the local forestry resources and the effects relative to local forestry management activity. Furthermore, forest impacts of a linear scheme are not experienced at a scheme-wide scale, rather more locally. This fragmentation of impacts is readily addressed for forestry holdings and

[5] Forestry Commission Scotland (2009) The Scottish Government's Policy on Control of Woodland Removal (online) Available at: https://www.forestry.gov.scot/publications/285-the-scottish-government-s-policy-on-control-of-woodland-removal [Accessed: July 2024]

named woodlands, which may incorporate distances of multiple tower spans. A full arboricultural survey of individual trees and tree groups was scoped out and impact assessment is restricted to forestry and woodland.

10.2.14 Forestry impact assessment relates only to the expansion of the wayleave from 40 m to 45 m from the centre line of the OHL. Permitted vegetation management within the existing wayleave is identified in the table of effects but is not incorporated into the magnitude of impact. For example, 1000 m of existing forest wayleave has a potential expansion of 5 m plus 5 m, if affecting both sides of the corridor: the area of impact is 10,000 m^2 or 1 ha. Impact magnitude, within Table 10-2, has been developed using professional judgement and thresholds are presented which are applicable to individual receptors. The thresholds are not intended to be considered collectively, for scheme-wide impacts, for the reasons outlined in Section 10.2.16.

Table 10-2: Magnitude criteria for forestry

Magnitude	Magnitude Criteria	Demonstrated outcome
High	Permanent removal of land from forestry >5 ha (to be mitigated ex situ) Premature felling >10 ha (to be restocked in situ)	Large adverse: removal of healthy and ecologically suitable forestry. Large benefit: removal of forestry from peat or inappropriate habitat. Response to plant health notice.
Medium	Permanent removal of land from forestry >1 ha<5 ha (to be mitigated ex situ) Premature felling of >5 ha<10 ha commercial forestry (to be restocked in situ)	Medium adverse: removal of healthy and ecologically suitable forestry. Medium benefit: removal of forestry from peat or inappropriate habitat. Response to plant health notice.
Low	Permanent removal of land from forestry <1 ha (to be mitigated ex situ) Premature felling of >1 ha<5 ha commercial forestry (to be restocked in situ)	Small adverse: removal of healthy and ecologically suitable forestry. Small benefit: removal of forestry from peat or inappropriate habitat. Response to plant health notice.
Negligible	No discernible permanent loss to forest land Premature felling of <1 ha commercial forestry (to be restocked in situ)	Effects small-scale or short-term. Like-for-like reinstatement generally possible.

10.2.15 The receptor sensitivity (Table 10-1) and magnitude of impact (Table 10-2) are combined in a classification of the likely significance of effect (Table 10-3). Major and moderate effects are significant; minor and negligible effects are not significant.

Table 10-3: Significance Matrix

	Magnitude of impacts				
Receptor Sensitivity		**High**	**Medium**	**Low**	**Negligible**
	High	**Major**	**Major**	**Moderate**	Minor
	Medium	**Major**	**Moderate**	Minor	Negligible
	Low	**Moderate**	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible

Limitations and Assumptions

10.2.16 The absence of UK-wide criteria for receptor sensitivity and effect magnitude are not considered a limitation. The assumptions and application of professional judgement to both sensitivity and magnitude criteria have been developed around forestry assets and activity in the region of the Proposed Development and that requirement is the reason for the absence of universal guidance. This tailoring of sensitivity and magnitude criteria has considered project scale, its linear form, the intensity of local forestry services and landscape character: It has been developed specifically in the geographic context of the Proposed Development and follows the experience of the author in contributing to several forestry EIA Reports across Scotland and in lowland England.

10.3 Baseline Conditions

10.3.1 Baseline conditions are the tree groups and woodland intersecting with the existing wayleave. No high sensitivity receptors were identified.

10.3.2 A full AIA of the Proposed Development was scoped out of this forestry assessment, but the utility arboriculture survey throughout the proposed wayleave of 45 m has provided information over and above woodland receptors. It follows that the data contained in Table 10-4 includes both currently permitted tree works (those within the existing 40 m wayleave) and further requirements from expanding the wayleave. The baseline forestry described in Table 10-4 is illustrated in Figures 8.1c (Volume 3).

10.3.3 For the most part, the proposed tree works would have 'no discernible impact on forest land' and the magnitude of effects would be very low (Table 10-2) which would result in minor or negligible effects (Table 10-3) which are not significant. However, the inclusion of the comprehensive data provides context, particularly regarding the risk-based approach being adopted to tree retention.

Table 10-4: Forestry and tree baseline from resilience survey, within the full width of existing wayleave and the proposed expanded wayleave

Tower number / interval	Felling	Retention
182-180	At Tower 182, fell hawthorn along track.	Mature sycamore and ash at Tower 180 to be retained.
179-178	Fell two oak and two beech. Small area of woodland, reduction of Scots pine, ash, and oak.	Retain one oak beside public road at Tower 179.
175-174	Selective felling based on species stature.	Scope for retention of mixed broadleaf woodland.
175-174	Fell sycamore alongside track.	Retain willow currently.
175-172	Selective removal of mixed broadleaves trackside between Towers 175-174. Selective removal of hawthorn at Tower 172.	
170-167	Fell mixed conifers and birch within corridor.	Mixed broadleaves very dense below OHL should be mulched.
167	Fell mixed conifers within corridor.	Retain beech.
166-165	Fell two sycamores along public road (one either side of OHL).	

Tower number / interval	Felling	Retention
166-165	Fell willow and ash at top of path banking.	Retain wild cherry.
164-161	At Towers 163- 162, recent planting of mixed broadleaf transplants (to 0.5 m only) - ascertain intent. At Tower 162, fell Scots pine but selective felling. At Tower 161, trackside sycamore and ash to be removed due to proximity to OHL.	At Tower 162, some retention of mixed broadleaves based on species stature.
162-161	Along public road, fell mature sycamore and ash within OHL corridor.	
160-157	At Tower 160, fell European larch. Close to Tower 158, fell one sycamore.	
156-152	At Piperdam plantation fell mixed conifers within corridor but selective felling of mixed broadleaves to all for some retention based on species stature. At Between Towers 153-152 row of ash to be felled beside drain.	Tower 154, one ash poses low risk and to be retained.
151	Selective felling of trackside sycamore and ash.	
151-150	Selectively fell mature mixed broadleaves. Fell sycamore and common alder regeneration below OHL.	
151-150	Selective felling of mixed broadleaves alongside public road at crossing of Blacklaw Burn.	
150	Fell mixed broadleaves (largely sycamore). Mature sycamore for selective felling.	
148-147	Selective felling of willow, wild cherry and common alder	
148-147	Selective felling of willow, wild cherry and common alder	
148-147	Selective removal of mixed broadleaves from trackside hedgerow. Public roadside poplar and ash and oak to be sectionally felled (two locations).	
146-143	Selective felling of willow, wild cherry and common alder	
144-143	Selective felling of oak and sycamore and crown reduction from woodland edge trees adjoining public road.	
144-143	Fell oak and sycamore below OHL.	
143-142	Fell hawthorn.	

Tower number / interval	Felling	Retention
142-140	At Tower 142, fell common alder and ash.	At Tower, 142 retain dogwood and hazel. Beech hedge between Towers 141-140 no current risk to OHL, but not to exceed 6 m height.
141-139	Selective removal of sycamore, willow and cypress from roadside screening.	Within site retain cypress and sycamore. Retain mixed broadleaf hedgerow providing screening from Janet Forbes Avenue.
141-140	Beside A90, oak, beech and wild cherry have been previously reduced. Selectively fell mixed broadleaves below the OHL.	Retain trees at corridor edge with reduction.
141-140	Fell five birch, five Scots pine and wild cherry.	Retain low growing shrubs. Retain junction planting, largely dogwood and hazel.
141-140	Fell two cypress.	Retain maple and birch.
140-139	No action required.	
139-138	Low OHL height requires felling of mixed broadleaves along field edge (though low current risk).	
139-135	Selective felling of sycamore and ash in line of trees.	Retain most mixed broadleaves. Retain mixed broadleaves with crown reduction in small woodland at Tower 138.
137-135	Between Towers 137-136, fell common alder: fell ditch-side mixed broadleaves ditch.	Mature beech and oak reduction alternative to felling. Between Towers 136-135, mature oaks either side of corridor, favour crown reduction over removal. Suspected beaver damage alongside ditch between Towers 137-136.
131-130	Fell hawthorn.	Retain wild cherry and willow at present.
131-130		Retain one oak beside public road at Tower 131.
128-125	Fell three sycamore along ditch. Fell drain-side mixed broadleaves and selective felling around Tower 127.	Retain species of lesser stature, including hazel, rowan and pear around Tower 127. Retain drain-side ash at Tower 126.
127-126	Fell ditch-side mixed broadleaves.	
124-119	Next to public road at Tower 123, at tail end of roadside tree belt, fell Scots pine. At Tower 120, fell mixed conifers and selective felling of mixed broadleaves.	Next to public road at Tower 123 retain mixed broadleaves. At Tower 121 retain a mature ash and hawthorn.
122-119	Fell mixed conifers along public road and selective reduction of mixed broadleaves.	Retain hawthorn.

Tower number / interval	Felling	Retention
120-119	Along public road, fell hawthorn where OHL over-sail low at Tower 119.	
117-116	Selectively fell wild cherry and ash.	Retain hawthorn.
117-115	Along drain between Towers 117-116, selectively fell wild cherry and ash. At Tower 115, fell scattered mixed conifers from the woodland edge.	Along drain between Towers 117-116 retain hawthorn. At Towers 116 and 115 retain mixed broadleaves by implementing crown reduction.
115-110	Woodland belt principally beyond corridor, with some incursions requiring clearance: between Towers 115-114 (oak / beech woodland and mixed broadleaves); and scrub at Tower 112.	
110-105	Between Towers 109-108, the habitat at Murie Wood is identified as LEPO. Fell mixed conifers and birch within the corridor. Between Towers 106-105 (Broadlie Burn), fell mixed conifers (*Sequoia* capable of striking OHL). At Tower 105, fell mixed conifers to corridor edge.	Adjacent to Tower 106, opportunity to retain sycamore. Between Towers 106-105 (Broadlie Burn), crown reduce mixed broadleaves to allow for retention. At Tower 105, retain oak.
104-103	Fell two conifers.	
104-103	Fell mixed conifer.	Retain garden wild cherry.
99-98	Road junction planting, largely dogwood and hazel.	
99-98	Fell mixed conifers and selective felling of mixed broadleaves.	
97-93	Mixed broadleaf adjacent to paddock require selective felling.	Retain mature oaks at Tower 94.
97	Fell small block of willow and ash at Tower 97.	
97	Sectional felling of occasional mixed conifers.	Retention of mature mixed broadleaf woodland with crown reduction.
97	Fell wild cherry at Tower 97.	
95		Retain wild cherry at Neverholm, Cairnie Road.
91		Retain mixed broadleaves on banks of River Tay at Tower 91 because of substantial over-sail of OHL.
90-85		Retain mixed broadleaves on banks of River Tay at Tower 90 because of substantial over-sail of OHL. Similarly retain willow and ash on bank of River Earn at Tower 85.
90-85	Between Towers 88-87 fell willow and common alder and selective felling of mixed broadleaf woodland.	At Tower 90 on bank of River Tay retain mixed broadleaves because of significant over-sail.

Tower number / interval	Felling	Retention
84		Common alder on flood plain below OHL no current risk. Lone oak at edge of corridor to be retained.
82	Selective felling of mixed broadleaves, largely ash, chestnut and sycamore.	
81-77	Selective felling of mixed broadleaves at Greenside Den within a restricted wayleave width. Fell separate group of ash, holly and hawthorn. Around Tower 77 some selective felling of ash and sycamore.	Around Tower 77, north of Pitcairlie Hill is an area identified as LEPO. It now comprises regenerated mixed broadleaves and will be retained as woodland habitat. Retain low growing group of mixed broadleaves.
77-66	Towers 77-69, mulch or hand fell mixed conifers. Fell birch. Towers 69-67, harvest small area of mixed conifers and scattered mixed conifers and mixed broadleaves.	Towers 77-69, retain smaller mixed broadleaves such as rowan.

Future Baseline

10.3.4 Trees are dynamic, living organisms, and close to an OHL will require ongoing inspection leading on occasion to management. However, as proposals represent a reinforcement of an existing OHL, the future baseline will reflect this dynamism of trees in the same way as the current baseline.

10.3.5 Within the wayleave the future baseline will be monitored through future arboricultural surveys to allow for removal or reduction in stature of individual trees where the possibility of tree failure presents an unacceptable risk to infrastructure. Similarly, woodlands within the wayleave will be managed to provide environmental services within this risk framework. Decisions within the wayleave may have consequences for continuous woodland compartments to reduce the risk of windthrow.

10.3.6 The potential future baseline, without the Proposed Development, would be unchanged from the current baseline. A continuation of the risk-based tree management strategy within the existing OHL wayleave would apply.

10.4 Issues Scoped Out

10.4.1 The Scoping Report (Section 7.6) scoped out a full BS5837:2012 assessment of all arboricultural features.

10.4.2 Ancient and veteran trees had not been identified in previous arboricultural surveys of the existing wayleave corridor and were not identified within the Woodland Trust's Ancient Tree Inventory. These were therefore scoped out.

10.4.3 Forest hydrology was scoped out of the forestry assessment, as per Section 7.6 of the Scoping Report.

10.5 Assessment of Effects, Mitigation and Residual Effects

Mitigation by Design

10.5.1 Mitigation by design is provided by the reinforcement of an existing OHL. The existing wayleave of 40 m will be extended to 45 m because of the upgrade to the infrastructure. Within the existing wayleave, a risk-based approach to tree management has been adopted and trees within the operational corridor are retained where the risk to network resilience from falling trees or tree branches during adverse weather is deemed low. That is, some trees and forestry are retained within the wayleave where the risk is deemed acceptable.

10.5.2 Mitigation by design will preserve the footprint of the woodland, adjacent to Tower 115, at Megginch. The separation of the OHL and woodland is approximately 20 m, but the woodland will be preserved through selective tree management as is currently the case. Occasional scattered conifers will be removed from within the mixed species woodland in which broadleaves dominate the composition. Crown reduction will be undertaken to the broadleaves, which generally respond better physiologically and provide better visual outcomes than attempting similar outcomes for conifers.

Construction Phase Impacts and Effects

10.5.3 From Table 10-4 the woodland receptors only have been used to determine the potential forestry impacts of an expanded wayleave, presented in Table 10-5.

Table 10-5: Potential forestry effects

Tower Interval Number	Receptor Name	Receptor Sensitivity	Area Affected (ha)	Effect Magnitude	Effect Significance
170-166	Dronley Wood	Medium	0.6[6]	Low	Minor
110-105	Murie Wood / Broadlie Burn	Medium	0.25	Low	Minor
77-66	Pitmedden Wood	Low	3.0	Medium	Minor

10.5.4 The effect of an increased wayleave gives rise to minor effects at three locations, namely Dronley Wood, Murie Wood / Broadlie Burn and Pitmedden Wood. At each location, the requirement for an extended management felling of trees beyond the wayleave was considered. Extended management felling may be required if a newly exposed woodland edge presents an opportunity for windthrow of trees beyond the wayleave.

10.5.5 Dronley Wood is the sole location where proposed felling beyond the wayleave is advocated. Near Tower 168, felling is proposed within the wayleave. The exposure of a new woodland edge, within the crop of mixed conifers, would create vulnerability to windthrow and good forestry practice is to extend the felling area so that retained trees beyond the wayleave are not at risk. Removing 0.17 ha west of the wayleave removes the entirety of the compartment. East of the wayleave, felling to an existing forest track, which affords a windfirm edge, extends the felling by 0.28 ha. The extended felling areas may be restocked with small stature broadleaf tree species. Wayleave management elsewhere within Dronley Wood adopts a risk-based approach, mulching beneath the OHL, retaining broadleaves whilst removing conifers from within mixed species compartments, and reducing tree heights to enable retention. The proposals are illustrated in Figure 10.1 (Volume 3).

[6] Includes areas of felling within the wayleave and extended management felling but excludes selective tree removals (thinning) and tree height reduction from within the wayleave. Refer to further explanatory text in paragraph 10.5.5.

10.5.6 It was concluded that the openness and stature of the neighbouring trees do not require extended management felling at Murie Wood / Broadlie Burn.

10.5.7 At Pitmedden Wood, between Towers 69 and 67, consideration was given to extended management felling. It was ruled out because compartments adjacent to the existing corridor are uniform over considerable hectarage, offering no windfirm edges. To the northeast of the OHL, the corridor is defined at approximately 50 m distance by a forest access track and clearance to the track is possible without a windthrow risk. To the southwest, however, there is a recognised risk of windthrow from exposing a new edge to the compartment, but the windfirm edge is at the boundary of the sub-compartment and this would extend tree removal to 4.4 ha (albeit with most of the area available for restocking).

10.5.8 The risk of windthrow has been assessed by field observation, time-sequence aerial imagery (from Google Earth Pro) and application of the ForestGales model, developed by Forest Research for application to UK forestry. Field observation confirmed the presence of Sitka spruce to 24 m height at 30 m distance to the OHL. These trees will be cleared from the existing corridor and the expanded corridor to 45 m. Aerial imagery from 2006 demonstrates that the Sitka spruce within the corridor was not established as part of the neighbouring forestry compartment (which has a straight edge boundary) but has established naturally. The distinction between the compartment and trees within the corridor was still evident on aerial imagery of 2017, but was less well defined by 2020 and not apparent in 2024.

10.5.9 ForestGales is a probabilistic model of windthrow based on variables of tree species, height and diameter and site characteristics, including soil type, rooting depth and separation distance between trees. Application of the ForestGales model identifies a low risk for windthrow. Due to the assessment of risk and because extended management felling could not be localised, it is proposed to fell only within the wayleave corridor, expanded to 45 m from the OHL. The additional clearance of trees that this entails represents a minor effect (Table 10-5).

10.5.10 For all locations, as specified in Table 10-5, the effect of removing trees within an expanded wayleave is deemed of minor significance. Trees are managed at the periphery of the existing wayleave, are not part of commercial plantation and are often of relatively small stature. The minor significance of expanding the wayleave is not a significant effect of the scheme to forestry.

10.5.11 Woodland edge management in situ is possible with the planting of woodland shrub species, such as hazel and blackthorn. The residual effect will remain minor or negligible.

10.5.12 Access to the wayleave will require some upgrades to existing forestry tracks, which may involve reprofiling of the ground to create favourable gradients. Upgrades are anticipated to require some vegetation management beside these existing routes, but this is a standard forestry management practice and there are no high sensitivity receptors. Furthermore, upgrading forestry routes would improve accessibility for timber lorries: forest roads are typically considered an asset for access for forestry management operations. The enhanced forest roading does not readily translate to the significance matrix within Table 10-3, but the benefit is estimated to be minor or negligible and hence not significant.

10.5.13 Beyond areas of forestry, access proposals have the potential for adverse effects to individual trees, requiring their removal or crown reduction. A full BS5837:2012 AIA was scoped out of the forestry assessment. Effects, particularly to avenue trees, are identified in relation to ecology and cultural heritage (Chapters 8 and 11 (Volume 2) respectively), where mitigation, including embedded mitigation through access redesign, has been developed with collaborative forestry input.

10.5.14 It is not proposed to provide physical protection, with fencing, of retained woodland trees beyond the wayleave. Good environmental practices within woodland will be secured through provision of the Construction Environment Management Document (CEMD), which will be consistent with the UK Forestry Standard[7].

Operational Phase Impacts

10.5.15 The operator has a legal obligation, under Electricity Safety Quality and Regulations 2002[8] to ensure trees are a safe distance from the OHL. Hence, throughout the operational phase, cyclical utility arboricultural surveys will be conducted, reflecting that trees are dynamic organisms. The obligations of the operator to meet industry standard safety clearance will be met and may require tree felling, crown reduction, selective pruning or height reduction.

10.5.16 Embedded mitigation during the operational phase is provided by the continuation of a risk-based assessment of individual trees and areas of forestry within the wayleave corridor.

10.5.17 The residual effect is that essential works to maintain a safe and reliable OHL power supply will result, over the operational phase, in tree management operations within the corridor that restricts trees to species of small stature and shrubs.

10.6 Mitigation

10.6.1 Mitigation tree planting will re-establish the area of extended management felling at Dronley Wood, with the planting mixture of species to be developed in conjunction with the landowner.

10.6.2 The applicant has committed to undertake off-site compensatory planting within the local authority boundary to reflect the removal of tree cover, from the expanded corridor, identified in Table 10-5.

Cumulative Effects

10.6.3 The cumulative assessment has been undertaken for projects listed in Chapter 5: EIA Approach and Methodology (Volume 2), and illustrated on Figure 5.1 (Volume 3).

10.6.4 The cumulative assessment for forestry is shown in Table 10-6 and Table 10-7. Where planning documentation was unavailable, a high-level review of forestry was conducted using aerial photography and the development boundary. This revealed that these other developments at an earlier stage in the planning process are principally located within agricultural land or have land uses other than forestry. The effects on forestry of the Alyth – Tealing 400 kV OHL upgrade have been assessed following the same methodology presented in this EIA Report chapter.

[7] Gov.uk (2017) The UK Forestry Standard (online) Available at: https://www.gov.uk/government/publications/the-uk-forestry-standard [Accessed: July 2024]
[8] https://www.legislation.gov.uk/uksi/2002/2665/contents

Table 10-6: Interactive (intra) cumulative assessment for Associated SSEN Developments

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative assessment	Additional mitigation
Alyth – Tealing 400 kV OHL upgrade	A	Alyth-Tealing	Upgrade of approximately 14 km of an existing 275 kV OHL between Alyth Substation and Tower 685 north-west of Tealing Substation to enable operation at 400 kV.	EIA Report in preparation (alongside the EIA Report for the Proposed Development.	Forestry present, no significant residual effects.	Potential for minor cumulative effects.	None.
Emmock (Tealing) substation	B	Near Emmock Road, Tealing	Construction of a new 400 kV substation in Tealing.	Scoping Report submitted 2nd July 2024.	Not available.	No forestry present therefore no cumulative effects.	None.
Kintore- Tealing 400 kV Connection	C	Kintore- Tealing	Construction of a new 400 kV OHL between Kintore and Tealing.	In Preparation – no screening or scoping submitted.	Not available.	Forestry present Potential for minor cumulative effects.	None.
Alyth-Tealing and Tealing-Westfield OHL Tealing (Emmock) substation tie-ins and associated tower dismantling	D	Tealing	Construction of a new OHL originating at some point on the existing OHLfrom 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. This will enable the removal of approximately 1.5 km of redundant OHL between Towers 680/682, and the existing Tealing Substation.	In Preparation – no screening or scoping submitted.	Not available.	No forestry present therefore no cumulative effects.	None.

Table 10-7 In-combination (inter) cumulative assessment for Other SSEN and 3rd Party Developments

Development	Ref. on Figure 5.1	Location	Description	Status	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.	Not available.	No forestry present therefore no cumulative effects.	None.
Moatmill Bridge Tealing Energy Storage Facility	F	Land at Moatmill Bridge, Tealing	Energy storage facility up to 50 MW, compound of equipment, meter building, fencing, security cameras, new belt of native trees and landscaping.	PAN Approved Subject to Conditions 3rd May 2023.	Not available.	No forestry present therefore no cumalative effects.	None.
Tealing Solar Energy Park	G	Near Duntrune at DD4 0PR	Application for Installation of a solar energy park of approximately 100 MW and all associated infrastructure.	Application submitted 17th November 2023. EIA not required.	No forestry present.	No cumulative effects.	None.
Tealing Battery Energy Storage Farm	H	Land to the northeast of Gagie Home Farm, Duntrune at DD4 OPR	Application for Installation of an 80 MW Battery Energy Storage Facility (BESS) and associated infrastructure.	Application Consented 13th December 2023 EIA not required.	No forestry present.	No cumulative effects.	None.
Solar Farm at land 500 m East of Stoneygroves Liff	I	Land 500 m East of Stoneygroves Liff	Solar farm installation with an export capacity of 20 MW (AC) (with peak generation capacity of 24-28MW) comprising ground-mounted solar photovoltaic arrays together with associated infrastructure and landscaping.	Application Approved Subject to Conditions 13th Match 2024.	Not available.	No forestry present therefore no cumulative effects.	None.

Development	Ref. on Figure 5.1	Location	Description	Status	Residual Significant Effects (if known) / information from any available sources on likely significant effects	Cumulative assessment	Additional mitigation
Battery Energy Storage at Cordon Farm, Abernethy	J	Land 600 m north-east of Cordon Farm, Abernethy	Formation of 30 MW BESS Facility with associated access and infrastructure.	Proposal of Application submitted 6th December 2022.	Not available.	No forestry present therefore no cumulative effects.	None.
Jamesfield Energy Storage Facility	K	Land 140 m north-east of Jamesfield Organic Centre Newburgh	Formation of a 49 MW Battery Energy Storage facility comprising battery storage units, ancillary buildings, vehicular access, landscaping and associated works.	Application Consented 28th September 2022. EIA not required.	Not available.	No forestry present therefore no cumulative effects.	None.
Balnuith Farm BESS (Tealing)	L	Balnuith Farm, Tealing, DD4 0RE	The construction and operation of a BESS 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.	Not available.	No forestry present therefore no cumulative effects.	None.
Fithie Energy Park BESS	M	Land to the north-west of Tealing Substation	Construction and Operation of up to 1400 MW BESS and associated infrastructure.	Screening Report submitted 23rd February 2024.	Not available.	No forestry present therefore no cumulative effects.	None.
Myreton BESS	N	Land to the south of Tealing Substation	A proposed BESS with an installed capacity of around 750 MW.	Screening Report submitted 22nd February 2024.	Not available.	No forestry present therefore no cumulative effects.	None.
SPEN TKUP Lines (Uprate to 400 kV operation)	O	Tower YS065 (SHET/SPT Border) near Pitmedden Forest to YS001 (Westfield) and YJ084 (Westfield) to YJ001 (Longannet)	Increase voltage of approximately 30 km of OHL from 275 kV to 400 kV.	No EIA screening or scoping available. Only high-level plan of route available.	Not available.	Forestry present, potential for minor cumulative effects.	None.

10.6.5 It was identified in Paragraph 10.2.12 that forestry impacts of linear schemes are experienced locally, and the assessment of effects considered discrete areas of woodland independently. This approach is equally applicable for the cumulative effects of the Proposed Development, the Alyth – Tealing 400 kV OHL upgrade and the SPEN TKUP Lines (Uprate to 400 kV operation). No significant effects have been presented within either the Proposed Development or the Alyth – Tealing upgrade, with the SPEN TKUP Lines having the potential for minor effects.

10.6.6 No significant cumulative effects are identified. It is further noted that the cumulative area of forestry impacts is insubstantial relative to the typical scale of forestry management activity within the vicinity of the Proposed Development and the Alyth – Tealing 400 kV OHL upgrade.

10.7 Summary

10.7.1 The results of a tree survey, undertaken in March 2024 by a third party, have been made available to provide baseline data for a forestry impact assessment. The data provide greater detail than would ordinarily be available for a forestry impact assessment. A full arboricultural survey had been scoped out, but the data available demonstrates the risk-based approach to tree felling or retention within the wayleave.

10.7.2 There is no national guidance relating to receptor sensitivity or impact magnitude, in part because this needs to be presented within the local context of the forest landscape and forestry industry. Sensitivity descriptors and impact thresholds have been developed for these proposals and combined in a sensitivity matrix. The approach considers woodlands as separate receptors rather than cumulatively across the proposals.

10.7.3 Woodland sites at Dronley Wood, Murie Wood / Broadlie Burn and Pitmedden Wood will require tree removals for an expanded wayleave. In each case the effect is deemed minor, and no significant effect is identified for forestry. The relationship between tree cover and open ground within forestry units is important for providing a range of ecological niches. The UK Forestry Standard requires the incorporation of open ground within forestry management units to a minimum of ten per cent. The extent of tree removal identified in Table 10-5 represents a modest change to the ratio of tree cover and open habitat. None of the woodland sites would experience tree removal from the whole of a woodland compartment. Nonetheless, the applicant has committed to undertake off-site compensatory planting within the local authority boundary.

10.7.4 Extended areas of tree felling (which would require landowner agreement) have been identified only at Dronley Wood and total 0.45 ha. Elsewhere, management felling and restocking with mixed broadleaves of limited stature to create a graduated edge to the wayleave would represent a positive ambition for long term tree stability and would secure landscape and ecological benefits. Whilst retention of small woodland fragments may become vulnerable to windthrow, an absolute requirement for extended management felling to commercial forestry compartments, beyond the wayleave, has not been identified.

10.7.5 Access to the wayleave using upgraded forestry tracks may require vegetation management, but this is standard forestry management that develops an asset that will assist woodland management and timber transport. The benefit to forestry operations is likely to be negligible or minor and does not present a significant effect.

10.7.6 Mitigation proposals for open habitat are considered within the Chapter 8: Ecology (Volume 2).

10.7.7 Environmental safeguards for retained trees and associated ecosystems will be provided in a CEMD, compliant with the UK Forestry Standard.

10.7.8 No significant effects are likely on either an individual or cumulative basis in relation to forestry, as reported in this chapter.