

Mid Moile Wind Farm

Environmental Statement Chapter 13: Forestry

December 2021

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13 INTRODUCTION

Introduction

- 13.1 This Environmental Impact Assessment (EIA) briefing document has been prepared on behalf of Energiekontor (the "Applicant") in respect of their proposed development at Mid Moile Wind Farm in Dumfries and Galloway.
- 13.2 The proposed Site (the Site) is located approximately 2.5km east of Cairnryan and 9km north of Stranraer. It consists primarily of the commercial forestry plantation Loch Lee Forest.
- 13.3 This chapter has been prepared by Andrew Crompton and Ben Taylor of Scottish Woodlands Ltd. Andrew is a qualified rural practice chartered surveyor and Royal Institution of Chartered Surveyors registered valuer who has worked for Scottish Woodlands since 1995 specialising in forestry assessment work, forest acquisition, valuation and renewables advice. Andrew has previously provided technical forestry consultancy to various wind farm developments and has contributed to several EIA Reports for wind farm projects. Ben is a qualified forest manager dealing with day-to-day forest management work including the preparation of Long Term Forest Plans (LTFP). He has previously been involved in the preparation of LTFP's accompanying EIA forestry chapter submissions.

Legislation and Policy Context

- 13.4 The following guidance, legislation and information sources have been considered in carrying out this assessment:
- The Forestry and Land Management (Scotland) Act 2018¹;
 - The Scottish Government's Policy on the Control of Woodland Removal²;
 - The UK Forestry Standard³;
 - Scotland's Forestry Strategy⁴; and
 - The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017⁵
- 13.5 The Scottish Government's Policy on the Control of Woodland Removal was introduced in 2009. The policy states that permanent woodland removal should only be permitted in circumstances where clearly defined public benefits can be achieved. It also documents that there may be situations where tree removal can be permitted when compensatory planting is subsequently undertaken.

Stakeholder Consultation

- 13.6 A Scoping Report was prepared by the Applicant and submitted to Dumfries & Galloway Council and other consultees in July 2021. A summary of the responses relating to forestry are presented on Table 13.1.

Table 13.1: Scoping responses

Consultee	Summary of Consultation Response	Response to Consultee
<p>Scottish Forestry(SF) 17/11/2021</p>	<p>The Scottish Government's policy on the Control of Woodland Removal (CoWRP) should be taken into account when preparing the development plans for the wind farm proposal.</p> <p>The EIA report should include a stand alone chapter on "Woodland management and tree felling".</p> <p>Applicants are advised to prepare a Long Term Forest Plan (LTFP) alongside their EIA report.</p> <p>SF is the main forestry consultee and should throughout the development of the proposal to ensure that proposed changes to the woodland are appropriate and address the requirements of the CoWRP.</p> <p>Felling operations and compensatory planting must be carried out in accordance with good forestry practice as defined in the UK Forestry Standard (UKFS).</p>	<p>The requirements of the CoWRP have been reflected in the proposals for tree felling and compensatory planting.</p> <p>Chapter 13 covers the requested issues.</p> <p>A draft LTFP revision is presented at Appendix 13.3</p> <p>SF were included in the scoping exercise and will be consulted with regards to the proposed revision to the current LTFP and the compensatory replanting required under the CoWRP once planning consent is secured for the proposed development.</p> <p>Any forestry operations will be implemented in accordance with the UKFS and associated guidance.</p>
<p>South Ayrshire Council</p>	<p>No indication of deforestation or woodland planting, nor of intended access roads to enable this. Council require further information on proposed forestry and woodland works and access roads to ensure no net detrimental impact to Forestry and Woodlands within South Ayrshire and surrounding roads network.</p> <p>It is fundamental that the application safeguards future private water supplies and quantity that may run through the woodlands and forests.</p>	<p>No impact on forestry or woodland within South Ayrshire.</p> <p>The management of forestry waste is considered at Appendix 13.2 and in Chapter 12 (Hydrology, hydrogeology and geology).</p>

Assessment Methodology and Significance Criteria

Scope of Assessment

- 13.7 Current land use for the Site was assessed and the woodland areas were analysed with regards to detail on area, age and species in order to quantify the potential effect of the Proposed Development on forestry crops within the Site.

Assessment Methods

- 13.8 Reference was made to existing forest management records and was supplemented and confirmed by information gained by inspections on site in November 2021. Desktop studies, reference to aerial photography and internet searches were used to provide additional information.

Significance

- 13.9 The effect of the construction, operation and decommissioning of the Proposed Development on the forestry within the Site is set out as described later in the chapter. The impact of the Proposed Development was assessed by use of the matrix table presented at Table 13.2

Table 13.2: Significance matrix

		Magnitude of change			
		Substantial	Moderate	Minor	Negligible
Sensitivity	High	Major	Major/ Moderate	Moderate	Moderate/ Minor
	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor
	Low	Moderate	Moderate/ Minor	Minor	Minor/ Negligible

- 13.10 The magnitude of change and the potential residual effects from the proposed Development were considered and the impacts evaluated by reference to the categories presented in Table 13.3.

Table 13.3: Significance assessment descriptions

Significance Category	Typical Descriptors of Effect
Substantial	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a serious change in a site or feature of district importance may also enter this category.
Moderate / Substantial	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.

Significance Category	Typical Descriptors of Effect
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor.
Minor	These beneficial or adverse effects may be raised as local issues. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project.
Negligible	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Baseline Conditions

Site Description

- 13.11 The Site lies on the east side of Loch Ryan close to Cairnryan in Dumfries & Galloway encompassing the hills of Brockloch Fell (235m AOD) and Mid Moile (258m AOD).
- 13.12 On the James Hutton Institute's Land Capability for Forestry Series the land is classed as grades F5 and F6. The land capability series is a map based classification of Scotland with the land area broadly split into seven zones of suitability based on an assessment of the degree of limitation imposed by the physical factors of soil, topography and climate on the growth of trees and on silvicultural practices. F5 is described as "*land where conifer selection is limited to spruces, larch and pines and to birch, alder or other hardy broadleaves*". F6 is described as land where "*species choice is limited to lodgepole pine and Sitka spruce and to amenity broadleaves such as birch and alder*".
- 13.13 Soils within the Site are as described in Chapter 12: Geology, Hydrology and Hydrogeology of this EIAR.
- 13.14 Generally, the physical characteristics of the Site are conducive to commercial forestry production with relatively few limitations on the growth of the main productive conifer species.

Forest Crops

- 13.15 The Site covers the majority of Loch Lee Forest which extends to 1149.11 hectares (ha) and comprises predominantly of commercial plantation forestry and associated unstocked open ground. The forestry crops were predominantly planted over the 10 year period from 1983 to 1992 although the site has recently entered the restructuring phase and following felling of some first rotation crops restocking was implemented in 2019. The compartment records detailing the current crops is presented at Appendix 1 and illustrated by the species map at Figure 13-1. The stocking details for the forest are also summarised in Table 13.4. Overall, 921.16ha are stocked with trees with the balance comprising of designed open ground, unplanted land and two lochs.

Table 13.4: Summary of current forest crops

Planting Year	Species								Total
	Lar	LP	MB	NS	OG	SS	SS/LP	Water	
0					216.33			11.63	227.95
1983		3.62				18.14	8.58		30.34
1984	1.32					100.33	2.45		104.10
1985	1.68	5.32				61.47	36.48		104.95
1986	1.22		0.31			26.14	55.46		83.14
1987			0.13			93.87			94.00
1988						178.70			178.70
1990			1.37			73.87			75.24
1991			1.80			78.24			80.04
1992	1.92		1.45			80.50			83.87
2019			3.73	53.66		29.37			86.77
Total	6.15	8.94	8.80	53.66	216.33	740.64	102.97	11.63	1149.11

(LAR= Larch, LP = Lodgepole pine, MB = Mixed broadleaves, NS = Norway spruce, OG= Open ground, SS = Sitka spruce, SS/LP = Sitka spruce/Lodgepole pine).

- 13.16 Sitka spruce in pure species plantings is the dominant crop present representing 64.45% of the forest area or 80% of the planted area. There are sections of slower growth in some compartments but overall the majority of the conifer crops across the property exhibit good growth rates and represent commercial stands of timber.
- 13.17 The mixed conifer crops generally comprise of intimate mixes of Sitka spruce and Lodgepole pine with these mixed species stands generally located on flatter, poorly draining sections of the forest.
- 13.18 None of the Site is designated as native woodland under the Forestry Commission Scotland's Native Woodland Survey of Scotland 2014⁶.
- 13.19 Loch Lee Forest benefits from an existing formal LTFP (case reference 16FGS09914) which was approved in 2016. The plan sets out the areas proposed for felling over seven 5-year phases with approvals in place for fellings up until 2025 when the mid-term review will be implemented prior to further felling commencing. Phase 1 felling and restocking has recently been completed and phase 2 felling will start shortly. Under phase 2 of the LTFP 139.41 hectares of conifers will be felled and replanted.

Identification and Evaluation of Key Impacts

Forestry removal for the construction and operation of the wind farm.

- 13.20 Construction of the permanent infrastructure required for the Proposed Development (including the construction compound, access tracks, borrow pits, turbine foundations, and crane pads) would require the removal of trees from the Site and for these areas to be subsequently maintained free of trees to ensure access for maintenance during the lifetime of the Proposed Development.

13.21 Construction of the Proposed Developed is projected to commence in 2025 which coincides with the end of the Phase 2 restructuring of the forest crops under the LTFP. By 2025 it is anticipated that the proposed felling would have been completed over an area of 139.42ha and these compartments would have been replanted with second rotation crops by 2024. This restructuring will change the composition of the existing crops and Table 13.5 summarises the projected crop breakdown at the proposed date of construction in 2025.

Table 13.5: Summary of forest crop composition by 2025

Planting Year	Species								Total
	Lar	LP	MB	NS	OG	SS	SS/LP	Water	
0					216.84			11.63	228.47
1983		3.62				18.14	8.58		30.34
1984						58.24	2.45		60.69
1985	1.21	5.32				61.47	25.70		93.69
1986	1.22		0.31			26.14	55.46		83.14
1987			0.13			93.87			94.00
1988						92.99			92.99
1990			1.37			73.87			75.24
1991			1.80			78.24			80.04
1992	1.92		1.45			80.50			83.87
2019			3.73	53.66		29.37			86.77
2024						139.87			139.87
Total	4.35	8.94	8.80	53.66	216.84	752.71	92.19	11.63	1149.11

(LAR= Larch, LP = Lodgepole pine, MB = Mixed broadleaves, NS = Norway spruce, OG= Open ground, SS = Sitka spruce, SS/LP = Sitka spruce/Lodgepole pine).

13.22 Figure 13-2 illustrates the impact of infrastructure construction on the forestry compartments. In total 81.16 ha of ground is required for infrastructure construction of which 64.31ha is currently stocked with trees. The composition of the ground that would be affected by infrastructure construction is summarised in Table 13.6. The 64.31ha of crops which would be cleared for infrastructure construction and maintenance of the Proposed Development represents 6.98% of the stocked forest area.

Table 13.6: Summary of tree crops removed for infrastructure construction

Planting Year	Species							Total
	Lar	LP	MB	NS	OG	SS	SS/LP	
0					16.85			16.85
1983		0.01				0.17		0.18
1984						11.20	0.26	11.45
1985	0.03					9.13	4.24	13.40
1986	0.89		0.31			4.24	7.50	12.95
1987						9.59		9.59
1988						4.21		4.21
1990						1.71		1.71
1991						0.01		0.01

2019			0.04	2.49		0.99		3.52
2024						7.30		7.30
Total	0.92	0.01	0.35	2.49	16.85	48.54	12.00	81.16

(LAR = Larch, LP = Lodgepole pine, MB = Mixed broadleaves NS = Norway spruce, OG= Open ground, SS = Sitka spruce, SS/LP = Sitka spruce & Lodgepole pine).

- 13.23 Some crops adjoining the areas to be felled to construct the roads, turbines, crane pads and sub-station etc will require further tree clearance due to the predicted instability of these adjoining crops. It is anticipated that windblow damage would develop in any cut faces left in these adjoining crops and therefore it would be more productive to clear these surrounding crops to existing wind-firm edges along existing roads and rides at the same time that infrastructure clearance cordons are cut to facilitate infrastructure construction. The areas that might be removed are illustrated in Figure 13-3 and summarised in Table 13.7. The area proposed as management felling for windblow mitigation is 211.30ha representing 22.94% of the stocked forest area.
- 13.24 The requirement for tree clearance as a consequence of windblow damage is based on the proposed layout. A 100m micro-siting allowance for turbine positions and infrastructure is proposed and this could reduce the areas required for felling, and therefore the impact of the current layout is considered a worst case scenario in terms of the areas identified for wind blow management.

Table 13.7: Summary of tree crops proposed for management felling

Planting Year	Species			Total
	Lar	SS	SS/LP	
1984		49.57	2.19	51.76
1985	1.10	10.25	16.82	28.17
1986	0.25	7.42	43.86	51.52
1987		46.36		46.36
1988		15.76		15.76
1990		17.73		17.73
Total	1.34	147.08	62.87	211.30

(LAR = Larch, SS = Sitka spruce, SS/LP = Sitka spruce & Lodgepole pine).

- 13.25 Given the age of the timber stands by the projected wind farm construction date of 2025 all felling within the management felling areas and the majority of the felling for infrastructure areas would be carried out by means of standard mechanised harvesting operations which would secure material for the commercial sawlog, pallet wood/fencing and small roundwood markets.
- 13.26 Some 3.52ha of P2019 crops and the 7.30ha of P.2024 crops would be too small to provide commercial timber from harvesting operations and would be subject to whole tree mulching to clear the crops as outlined in the proposed waste management plan presented at Appendix 13.2.
- 13.27 Under the existing LTFP the felling phases approved over the next 20 years of the plan extend to 620.77ha over 4 phases. The combined area of tree clearance proposed for infrastructure construction and management felling extends to 275.61ha which, although larger than any single 5 year felling phase under the LTFP, can reasonably be

accommodated with an appropriate variation to the components of the current phases. A draft LTFP revision has been prepared and is provided at Appendix 13.3. The terms of the revision will be discussed with Scottish Forestry post-consent and any revised LTFP will be formalised and agreed prior to construction proceeding for the Proposed Development.

Table 13.8: Summary of proposed LTFP felling

LTFP Phase	Timing	Current Plan	Proposed Plan
		Area (ha)	Area (ha)
Phase 1	2016-2020	101.62	101.62
Phase 2	2021-2025	140.55	140.55
Phase 3*	2026-2030	204.85	226.42
Phase 4	2031-2035	173.75	152.25
Total Phases 1-4		620.77	620.84

*The proposed Phase 3 felling excludes the infrastructure felling extending to 64.31ha.

- 13.28 Table 13.8 confirms that the total areas to be consented for felling under the LTFP would remain similar under the revision to the current LTFP so as to accommodate the required management felling areas albeit that the 64.31Ha of felling required for infrastructure construction to be consented under the planning application will also be felled during that time frame.
- 13.29 Areas felled for windblow mitigation within the forests would be replanted with a second rotation crop as determined by the LTFP in place for the property. It is assumed that any revision agreed in respect of the current LTFP (contract 16FGS09914) would not significantly change the restocking design required to accommodate the wind farm infrastructure other than to accommodate the necessary crop proportions required to comply with the UK Forestry Standard UKWAS.
- 13.30 The visual effect of the loss of trees is assessed in Chapter 6: Landscape and Visual.

Forestry removal for the decommissioning of the wind farm

- 13.31 There would be no additional impact on the woodland areas as a consequence of the decommissioning of the Proposed Development as it is envisaged that the intended infrastructure could be removed and the ground re-instated without removing further trees from the Site.

Cumulative Effects and Interaction of Effects

Tree Removal

- 13.32 There are no particular cumulative effects of tree removal linked to other wind farm projects in the area due to the restocking and compensatory planting mitigation which will be implemented in respect of the Proposed Development.
- 13.33 The possible impact of traffic movements due to timber harvesting associated with the tree removal proposed is addressed under Chapter 11: Traffic and Transportation.

Mitigation Measures

Tree Replanting

- 13.34 Under the CoWRP any tree crops permanently removed for the Proposed Development would require to be replanted on a like-for-like area basis either on the Site or at a suitable location.
- 13.35 It is proposed that trees removed from the management felling areas cleared to create wind-farm boundaries in crops adjoining the infrastructure construction areas would be restocked immediately in the same location (with possible minor adjustments to improve landscape design if requested by Scottish Forestry or other stakeholders or to ensure species proportions comply with the UK Forestry Standard (UKFS)). The present LTFP (contract 16FGS09914) shows that all of the land encompassed within management felling areas is due to be restocked with Sitka spruce and this is illustrated in Figure 13-4.
- 13.36 64.31ha of crops would be permanently removed for infrastructure construction and would be replaced by an appropriately designed new planting scheme on a substitute site in order to satisfy the requirements of the CoWRP. The location of that substitute site has yet to be identified and would be subject to detailed agreement with Scottish Forestry to include design, planting timescale and an appropriate post-planting maintenance schedule in advance of construction commencing on the Proposed Development.
- 13.37 The substitute site would replicate the total area of trees felled for infrastructure construction (64.31ha) but would also include an enhanced proportion of broadleaf crops and additional associated open ground so as to achieve the proportions of these elements required under the UKFS. The site would include a 5% mixed broadleaf component and 10% of designed open ground accompanying the area of replanted conifers. The required areas are illustrated in Table 13.9 and confirm that the substitute site will require to be at least 71.46ha in size.

Table 13.9: Summary of proposed compensatory planting

Species	Felling for Infrastructure (ha)	Compensatory replanting (ha)
Conifers	63.96	60.74
Broadleaves	0.35	3.57
Total Stocked Area	64.31	64.31
Unstocked Open Ground	-	7.15
Total Substitute Site Area	-	71.46

Residual Effects

- 13.38 The proposed on-site restocking of management felling areas combined with any substitute site planting required to satisfy the terms of the CoWRP to compensate for crops lost to infrastructure construction would ensure that the gross areas of forest crops would

be maintained once the proposed mitigation planting work had been completed as illustrated in Table 13.10 below.

Table 13.10: Summary of tree removal and replanting

	Species Area (ha)		
	Conifers	Broadleaves	Total
Baseline Woodland Stocking	912.36	8.80	921.16
Felling for infrastructure construction	-63.96	-0.35	-64.31
Management felling within windblow mitigation zones	-211.30	0	-211.30
Restocking within windblow mitigation zones	211.30	0	211.30
Compensatory planting	60.74	3.57	64.31
Post-construction woodland stocking	909.14	12.02	921.16

- 13.39 The construction phase of the Proposed Development will involve removal of trees for infrastructure construction and the removal of trees over adjoining areas to ensure the windfirm integrity of adjoining stands of timber. The areas to be felled to create wind firm edges (totalling 211.3 ha) will be replanted post-construction within the Site and the area of trees removed for infrastructure construction (extending to 64.31 ha) will be replicated by a compensatory planting scheme. In light of this it is considered that the magnitude of change applicable to the net impact on the forest crops due to the construction of the Proposed Development is "Minor" as referenced from the impact matrix presented at Table 13.2. As the changes relate to existing plantation forestry which can be replicated through additional like-for-like planting it is also relevant to consider the sensitivity of the magnitude of change to be "Low".
- 13.40 During the operation and decommissioning phases of the Proposed Development it is not envisaged that further tree felling will be required so there should be no further impact on the forest crops as a result of these phases of operations.
- 13.41 Therefore, the overall likely significance of the changes to the forestry crops as a consequence of the Proposed Development (felling and proposed mitigation) would be assessed as of **minor adverse** and therefore **not significant** in EIA terms.

Summary

- 13.42 The Site covers a large commercial forestry property extending to an area of 1149.11 ha of which 912.36 ha comprises of conifer forestry crops.
- 13.43 A total area of 64.31 ha of trees would be removed due to the Proposed Development to accommodate infrastructure including roads and turbines.
- 13.44 A total of 211.30 ha may be removed from adjoining compartments to ensure the stability of surrounding crops and these areas would then be replanted in line with any agreed Long Term Forest Plan for the forests.

- 13.45 Compensatory woodland planting to create 64.31ha of forest crops would be created on a substitute planting site in order to comply with the requirements of the Scottish Government's Control of Woodland Removal Policy.

Acronyms

Table 13.11: Acronyms and Abbreviations

Acronym	Definition
AOD	Above Ordnance Datum
CoWRP	Control of Woodland Removal Policy
EIAR	Environmental Impact Assessment Report
ha	Hectare
LTFP	Long Term Forest Plan
UKFS	UK Forestry Standard

References

- 13.46 ¹UK Legislation (2018). Forestry and Land Management (Scotland) Act 2018. Available at: <https://www.legislation.gov.uk/asp/2018/8/contents/enacted>
- ² Forestry Commission Scotland (2009). The Scottish Government's Policy on the Control of Woodland Removal. Edinburgh. Available at: <https://forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance> (Note that in April 2019 Forestry Commission Scotland became "Scottish Forestry")
- ³ Forestry Commission (2017). The UK Forestry Standard. Edinburgh. Available at: <https://www.gov.uk/government/publications/the-uk-forestry-standard>
- ⁴ The Scottish Government (2019). Scotland's Forestry Strategy. Edinburgh. Available at: <https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/>
- ⁵ The Scottish Government (2017). The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at <https://www.legislation.gov.uk/ssi/2017/113/contents/made>
- ⁶ Forestry Commission Scotland (2014). Scotland's Native Woods. Forestry Commission Scotland, Edinburgh

Non-Technical Summary

Introduction

This Environmental Impact Assessment (EIA) briefing document has been prepared on behalf of Energiekontor (the "Applicant") in respect of a proposal for the development, operation and subsequent decommissioning of a wind farm comprising of up to 15 wind

turbines and associated infrastructure ('the Proposed Development') at Mid Moile Wind Farm in Dumfries and Galloway.

Legislation and Policy Context

The following guidance, legislation and information sources have been considered in carrying out this assessment:

- The Forestry and Land Management (Scotland) Act 2018¹;
- The Scottish Government's Policy on the Control of Woodland Removal²;
- The UK Forestry Standard³;
- Scotland's Forestry Strategy⁴; and
- The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017⁵

The Scottish Government's Policy on the Control of Woodland Removal was introduced in 2009. The policy states that permanent woodland removal should only be permitted in circumstances where clearly defined public benefits can be achieved. It also documents that there may be situations where tree removal can be permitted when compensatory planting is subsequently undertaken.

Baseline Conditions

The Site covers the majority of Loch Lee Forest which extends to 1149.11 hectares (ha) and comprises predominantly of commercial plantation forestry and associated unstocked open ground. The forest crops extend to 921.16ha as summarised in Table 13.1.

Table 13.1: Summary of current forest crops

Planting Year	Species								Total
	Lar	LP	MB	NS	OG	SS	SS/LP	Water	
0					216.33			11.63	227.95
1983		3.62				18.14	8.58		30.34
1984	1.32					100.33	2.45		104.10
1985	1.68	5.32				61.47	36.48		104.95
1986	1.22		0.31			26.14	55.46		83.14
1987			0.13			93.87			94.00
1988						178.70			178.70
1990			1.37			73.87			75.24
1991			1.80			78.24			80.04
1992	1.92		1.45			80.50			83.87
2019			3.73	53.66		29.37			86.77
Total	6.15	8.94	8.80	53.66	216.33	740.64	102.97	11.63	1149.11

(LAR= Larch, LP = Lodgepole pine, MB = Mixed broadleaves, NS = Norway spruce, OG= Open ground, SS = Sitka spruce, SS/LP = Sitka spruce/Lodgepole pine).

None of the Site is designated as native woodland under the Forestry Commission Scotland's Native Woodland Survey of Scotland 2014⁶.

Loch Lee Forest benefits from an existing formal LTFP (case reference 16FGS09914) which was approved in 2016. The plan sets out the areas proposed for felling over seven 5-year phases with approvals in place for fellings up until 2025 when the mid-term review will be implemented prior to further felling commencing. Phase 1 felling and restocking has recently been completed and phase 2 felling will start shortly. Under phase 2 of the LTFP 139.41 hectares of conifers will be felled and replanted.

Identification and Evaluation of Key Impacts

Construction of the permanent infrastructure required for the Proposed Development (including access tracks, turbine foundations and crane pads) will require the removal of trees from the property. To accommodate the Proposed Development 81.16ha of land will be required to facilitate infrastructure construction and subsequent maintenance access. Of this area, 66.31ha is currently stocked with tree crops representing 6.98% of the stocked forest area. Some crops adjoining the areas to be felled for infrastructure construction will require to be felled due to the predicted instability of these crops. The area of proposed management felling for windblow mitigation is 211.30ha representing 22.94% of the stocked forest area. The areas that might be removed for infrastructure construction and management felling are illustrated in Table 13.2.

Table 13.2: Summary of tree removal

	Species Area (ha)		Total
	Conifers	Broadleaves	
Felling for infrastructure construction	63.96	0.35	64.31
Management felling within windblow mitigation zones	211.30	0	211.30
Total	275.26	0.35	275.61

Mitigation Measures

It is proposed that trees removed for management felling over the 211.30ha cleared to create wind-firm boundaries in crops adjoining the infrastructure construction areas would be restocked immediately in the same location. The present LTFP (contract 16FGS09914) shows that all of the land encompassed within the management felling areas is due to be restocked with Sitka spruce.

The 64.31ha of crops permanently removed for infrastructure construction would be replaced by an appropriately designed new planting scheme on a substitute site in order to satisfy the requirements of the CoWRP. The location of that substitute site has yet to be identified and would be subject to detailed agreement with Scottish Forestry to include design, planting timescale and an appropriate post-planting maintenance schedule in advance of construction commencing on the Proposed Development.

The proposed on-site restocking of management felling areas combined with the intended new planting on a substitute site to compensate for crops lost to infrastructure construction would ensure that the total area of tree crops would be maintained.

References

- ¹UK Legislation (2018). Forestry and Land Management (Scotland) Act 2018. Available at: <https://www.legislation.gov.uk/asp/2018/8/contents/enacted>
- ² Forestry Commission Scotland (2009). The Scottish Government's Policy on the Control of Woodland Removal. Edinburgh. Available at: <https://forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance> (Note that in April 2019 Forestry Commission Scotland became "Scottish Forestry")
- ³ Forestry Commission (2017). The UK Forestry Standard. Edinburgh. Available at: <https://www.gov.uk/government/publications/the-uk-forestry-standard>
- ⁴ The Scottish Government (2019). Scotland's Forestry Strategy. Edinburgh. Available at: <https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/>
- ⁵ The Scottish Government (2017). The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at <https://www.legislation.gov.uk/ssi/2017/113/contents/made>
- ⁶ Forestry Commission Scotland (2014). Scotland's Native Woods. Forestry Commission Scotland, Edinburgh

Appendix 1: Loch Ree Forest compartment schedule

FID	ID	Cpt	Species	Area	PY
144	144	1a11	OG	0.5868	0
141	141	1a12	NS	3.2202	2019
138	138	1a14	NS	8.604	2019
32	32	1a16	SS	1.3459	1983
25	25	1a19	SS	11.7327	2019
126	126	1a2	SS	0.2438	2019
142	142	1a21	OG	14.147	0
135	135	1a22	NS	0.1583	2019
34	34	1a23	NS	6.1989	2019
137	137	1a24	NS	0.6409	2019
131	131	1a26	SS	0.1375	2019
26	26	1a3	NS	17.4015	2019
33	33	1a4	NS	5.7484	2019
136	136	1a5	NS	0.4508	2019
28	28	1a7	SS	14.2277	1983
27	27	1a8	SS	9.4237	2019
29	29	1a9	SS	2.5711	1983
96	96	1b15	SS	6.1975	2019
132	132	1b18	SS	1.5277	2019
95	95	1b20	SS/LP	8.5775	1983
133	133	1b25	SS	0.1096	2019
140	140	1c17	NS	1.703	2019
134	134	1e10	LP	3.62	1983
130	130	1z1	NS	1.4001	2019
139	139	1z13	OG	0.8999	0
11	11	1z6	OG	0.0509	0
143	143	2a1	OG	11.5656	0
24	24	2a12	SS	2.2698	1984
23	23	2a15	SS	7.1072	1984
240	241	2a16	SS	0.2562	1984
19	19	2a2	SS	9.6679	1984
21	21	2a3	SS	4.8569	1984
17	17	2a4	SS	12.602	1984
18	18	2a5	SS	24.4667	1984
20	20	2a6	SS	11.7511	1984
22	22	2a8	SS	2.9814	1984
237	238	2a9	SS	24.3713	1984
147	147	2b7	SS/LP	2.448	1984
145	145	2c10	Larch	0.7259	1984
146	146	2c11	Larch	0.5949	1984
4	4	2c14	OG	0.1494	0
8	8	2y13	Water	7.7959	0

FID	ID	Cpt	Species	Area	PY
116	116	3a10	SS	5.9111	1985
109	109	3a11	SS	6.4032	1985
111	111	3a13	SS	0.0957	1985
107	107	3a14	SS	1.7215	1985
16	16	3a20	SS	6.8676	1985
15	15	3a21	SS	13.016	1985
31	31	3a22	SS	1.1652	1985
30	30	3a23	SS	7.2424	1985
115	115	3a29	Larch	0.0559	1985
121	121	3a3	SS	1.0873	1985
127	127	3a4	SS	1.4056	1985
128	128	3a5	SS	3.313	1985
119	119	3a6	SS	1.9223	1985
118	118	3a7	SS	2.168	1985
35	35	3a9	SS	9.1521	1985
92	92	3b15	SS/LP	14.5747	1985
93	93	3b16	SS/LP	7.8585	1985
99	99	3b17	SS/LP	2.9272	1985
112	112	3b18	SS/LP	6.4778	1985
98	98	3b2	SS/LP	4.645	1985
117	117	3c24	Larch	0.822	1985
120	120	3c25	Larch	0.1126	1985
113	113	3c27	Larch	0.1323	1985
114	114	3c28	Larch	0.0857	1985
129	129	3c30	Larch	0.4731	1985
108	108	3d12	LP	2.4524	1985
110	110	3d19	LP	2.8643	1985
13	13	3y26	Water	0.0874	0
9	9	3y31	Water	0.1051	0
10	10	3y32	OG	0.1145	0
14	14	3z1	OG	0.2596	0
123	121	3z33	OG	0.542	0
124	124	3z34	OG	0.1624	0
122	122	3z35	OG	29.3947	0
125	125	3z8	OG	0.1071	0
213	214	4a1	OG	20.0678	0
239	240	4a10	SS	0.5284	1986
101	101	4a11	SS	0.7635	1986
198	199	4a12	SS	0.9761	1986
100	100	4a3	SS	1.2756	1986
104	104	4a6	SS	0.4212	1986
52	52	4a8	SS	11.6128	1986
51	51	4a9	SS	10.5607	1986
97	97	4b11	SS/LP	6.1686	1986

FID	ID	Cpt	Species	Area	PY
90	90	4b13	SS/LP	19.8724	1986
238	239	4b2	SS/LP	18.2685	1986
102	102	4b4	SS/LP	1.0853	1986
94	94	4b5	SS/LP	3.0142	1986
91	91	4b7	SS/LP	7.054	1986
235	236	4c15	Larch	0.8927	1986
234	235	4c16	Larch	0.0808	1986
236	237	4c17	Larch	0.2506	1986
106	106	4f13	MB	0.137	1986
105	105	4f15	MB	0.1748	1986
6	6	4y14	Water	0.044	0
12	12	4y16	OG	0.1098	0
218	219	5a10	MB	0.0679	2019
216	217	5a11	MB	0.45	2019
80	80	5a12	SS	3.8976	1987
47	47	5a13	SS	12	1987
48	48	5a14	SS	4.5563	1987
49	49	5a15	SS	15.7436	1987
50	50	5a16	SS	7.2785	1987
197	198	5a17	SS	0.5746	1987
53	53	5a2	SS	2.1658	1987
64	64	5a3	SS	9.3579	1987
233	234	5a4	SS	1.1368	1987
55	55	5a5	SS	9.3111	1987
54	54	5a6	SS	12.0842	1987
103	103	5a7	SS	0.3727	1987
56	56	5a8	SS	6.49	1987
219	220	5a9	MB	1.4926	2019
196	197	5f2	MB	0.134	1987
214	215	5z1	OG	20.824	0
215	216	5z3	MB	0.2904	2019
217	218	5z4	MB	0.1617	2019
231	232	6a10	SS	0.3217	1988
61	61	6a11	SS	10.3772	1988
84	84	6a12	SS	3.2473	1988
230	231	6a13	SS	0.0845	1988
62	62	6a14	SS	10.0073	1988
83	83	6a15	SS	1.4078	1988
82	82	6a16	SS	12.0782	1988
226	227	6a17	SS	1.4407	1988
81	81	6a18	SS	1.6741	1988
74	74	6a19	SS	10.601	1988
223	224	6a2	MB	1.2696	2019
73	73	6a20	SS	11.3419	1988

FID	ID	Cpt	Species	Area	PY
75	75	6a21	SS	2.4827	1988
225	226	6a22	SS	0.2172	1988
87	87	6a23	SS	4.6534	1988
220	221	6a24	SS	1.5548	1988
71	71	6a25	SS	11.8467	1988
72	72	6a26	SS	13.9023	1988
224	225	6a27	SS	0.0808	1988
70	70	6a28	SS	22.5245	1988
77	77	6a29	SS	12.6139	1988
57	57	6a3	SS	2.6799	1987
78	78	6a30	SS	7.5579	1988
58	58	6a4	SS	6.2188	1987
63	63	6a5	SS	12.2675	1988
59	59	6a8	SS	14.742	1988
60	60	6a9	SS	11.6791	1988
227	228	6z1	OG	34.3542	0
2	2	6z10	OG	0.2013	0
3	3	6z13	OG	0.0764	0
1	1	6z6	OG	0.1261	0
5	5	6z7	OG	0.1899	0
85	85	7a2	SS	5.8693	1990
66	66	7a3	SS	10.5593	1990
65	65	7a4	SS	16.7247	1990
76	76	7a5	SS	1.3661	1990
68	68	7a6	SS	7.7239	1990
69	69	7a7	SS	3.0799	1990
67	67	7a8	SS	10.1436	1990
229	230	7a9	SS	0.3261	1990
228	229	7z1	OG	13.1613	0
45	45	8a2	SS	8.1228	1990
86	86	8a4	SS	1.7642	1990
46	46	8a5	SS	8.1903	1990
79	79	8a6	NS	7.0431	2019
222	223	8a7	NS	0.9527	2019
221	222	8a8	NS	0.0693	2019
232	233	8a9	NS	0.0709	2019
210	211	8f2	MB	0.7633	1990
208	209	8f3	MB	0.363	1990
209	210	8f3	MB	0.2478	1990
200	201	8z1	OG	9.1846	0
211	212	8z4	OG	0.9872	0
199	200	8z5	OG	0.4904	0
41	41	9a10	SS	3.8309	1991
163	163	9a11	SS	9.5217	1991

FID	ID	Cpt	Species	Area	PY
166	166	9a12	SS	2.3777	1991
167	167	9a13	SS	2.436	1991
42	42	9a14	SS	5.1613	1991
40	40	9a15	SS	5.126	1991
43	43	9a16	SS	7.429	1991
205	206	9a17	SS	0.6234	1991
39	39	9a18	SS	16.7995	1991
203	204	9a19	SS	0.4992	1991
149	149	9a2	SS	2.5966	1991
204	205	9a20	SS	0.8426	1991
201	202	9a21	SS	0.7386	1991
206	207	9a22	SS	0.6722	1991
44	44	9a23	SS	5.7902	1991
152	152	9a3	SS	0.0572	1991
150	150	9a4	SS	0.6609	1991
89	89	9a5	SS	6.1734	1991
162	162	9a6	SS	0.6022	1991
151	151	9a7	SS	0.813	1991
88	88	9a8	SS	4.0938	1991
148	148	9a9	SS	1.3948	1991
207	208	9f24	MB	0.458	1991
194	195	9f25	MB	0.5938	1991
195	196	9f26	MB	0.15	1991
202	203	9f27	MB	0.1948	1991
153	153	9f28	MB	0.3999	1991
7	7	9y23	Water	3.5937	0
165	165	9z1	OG	28.8735	0
212	213	9z29	OG	0.1309	0
164	164	9z30	OG	0.7347	0
174	174	10a11	SS	7.1868	1992
188	188	10a12	SS	7.0427	1992
0	0	10a13	SS	0.0315	1992
186	186	10a14	SS	1.0764	1992
187	187	10a15	SS	1.7294	1992
185	185	10a16	SS	1.7151	1992
184	184	10a17	SS	0.1369	1992
183	183	10a18	SS	3.8074	1992
175	175	10a19	SS	1.0533	1992
38	38	10a2	SS	6.3956	1992
172	172	10a20	SS	2.0219	1992
173	173	10a21	SS	4.0628	1992
168	168	10a22	SS	1.5154	1992
170	170	10a23	SS	5.0363	1992
156	156	10a24	SS	4.445	1992

FID	ID	Cpt	Species	Area	PY
36	36	10a3	SS	9.0827	1992
37	37	10a4	SS	8.206	1992
161	161	10a5	SS	4.1364	1992
191	192	10a6	SS	0.5689	1992
160	160	10a7	SS	5.4527	1992
189	190	10a8	SS	0.8644	1992
190	191	10a9	SS	4.9315	1992
180	180	10c33	Larch	0.3983	1992
179	179	10c34	Larch	0.0759	1992
181	181	10c35	Larch	0.0566	1992
182	182	10c36	Larch	0.657	1992
178	178	10c37	Larch	0.7315	1992
154	154	10f25	MB	0.5521	1992
171	171	10f28	MB	0.2691	1992
193	194	10f29	OG	0.0761	0
169	169	10f30	MB	0.6325	1992
155	155	10z1	OG	26.4137	0
157	157	10z26	OG	0.812	0
159	159	10z27	OG	0.5468	0
176	176	10z31	OG	0.0842	0
177	177	10z32	OG	0.1603	0
192	193	10z38	OG	0.5124	0
158	158	10z39	OG	0.2293	0
Total				1149.11	