

BREACKERIE WIND FARM

Outline Habitat Management Plan

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REPORT

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1 INTRODUCTION

1.1 Background

- 1.1.1 The proposed Breackerie Wind Farm (the Proposed Development) is situated on the southern end of the Kintyre peninsula, centred on grid reference NR 63788 16729, approximately 8km southwest of Campbeltown in the planning authority area of Argyll and Bute Council (see Figure 1 – Site Location Plan). The present land use comprises commercial conifer forestry which is actively managed. The site is owned by multiple parties, and the boundaries of landownership are provided in Figure 2.
- 1.1.2 The Proposed Development will comprise of up to 13 wind turbines. In addition to the wind turbines, the Proposed Development would also contain the following ancillary infrastructure:
- Site tracks;
 - Temporary construction compound;
 - Storage area;
 - Battery storage;
 - Crane hardstandings;
 - High voltage and control cables;
 - Substation building;
 - Energy storage compound; and
 - Borrow pits.
- 1.1.3 The core of the site comprises a basin created by the surrounding hills, with the Lecknacreive Burn running generally north-west to south-east. The summit of Tirfergus Hill (260 m AOD) to the north is out with the site boundary, while the summits of Cnoc nan Gabhar (239 m AOD) and Cnoc Odhar (277 m AOD) to the east, as well as Achnaslishaig Hill (307 m AOD) to the south and The Slate (384 m AOD) to the north-west all lie within the site boundary.
- 1.1.4 The landscape comprises a rolling plateau of densely forested hills, contrasting with local summits, with a small-scale valley to the immediate east which the B842 passes through. This contains most of the settlement within the area. Land to the west and south-west comprises steep coastal hills which drop steeply to the sea. To the north, the landform flattens into a broad lowland plain between Macrihanish and Campbeltown.
- 1.1.5 Settlement within the wider area is relatively sparse, with some small settlements, farms, and scattered residential properties located predominately to the eastern side of the site. Within 5km of the site, the small settlements of Machrihanish, Drumlemble, Stewarton, Killellan and Killeonan/Knocknaha are located to the north and north-east of the site. Other small settlements within 10km of the site include Kilchenzie to the north, Peninver to the north-east, and Millpark and Southend to the south-east.

1.2 Purpose of the OHMEP

- 1.2.1 The purpose of this Outline Habitat Management Plan (OHMP) is to set out the measures to be implemented within the application site to provide for restoration of habitats and biodiversity enhancement in relation to priority peatland habitats and ecological and ornithological interests, in addition to the mitigation of the effects of the Proposed Development. The measures compensate for habitat lost to the Proposed Development and provide significant additional biodiversity enhancement. The OHMP also sets out measures for the long-term retention and monitoring of the implemented measures over the lifetime of the Proposed Development.
- 1.2.2 The measures set out in this OHMP (and subsequently the HMP) meet the requirements of National Planning Framework 4, Policy 3b, through enhancing biodiversity, including restoring degraded habitats and building and strengthening nature networks and the connections between

them. The measures also accord with NatureScot guidance in relation to compensation for the loss of priority peatland habitat.

- 1.2.3 This OHMP will be used as the basis for a detailed Habitat Management Plan (**HMP**), to be approved and implemented under a suitably worded planning condition, in consultation with an appointed Habitat Management Group (HMG), prior to the commencement of construction of the Proposed Development.
- 1.2.4 The implementation and monitoring of the HMP would be managed through the HMG. The HMG will advise on detailed actions and make recommendations for new and/or revisions to the HMP. The HMG will comprise representatives of the Applicant, landowners, the Council and other relevant stakeholders.
- 1.2.5 Implementation of the HMP measures will be fully funded by the Applicant.
- 1.2.1 The HMP would provide for monitoring and reporting of the habitat management outcomes to allow for adaptive habitat management in order to meet the HMP objectives.

Previous OHMP

- 1.2.2 An Outline Habitat Management Plan (**the 2023 OHMP**) was submitted in 2023 as part of the Proposed Development application (Technical Appendix 8.5). Actions to be implemented within the Proposed Development's application boundary included:
 - Activities to reduce the suitability of permanently open areas for hen harriers;
 - Restoration of 7ha of degraded peatland habitat to mitigate for the potential effects of the Proposed Development to peatland habitats; and
 - Actions to reduce the attractiveness of open areas and boundary features for use by bats as foraging and commuting flightlines.
- 1.2.3 Figure 5 provides the location of the peatland restoration area as proposed in the 2023 OHMP, known as The Slate.
- 1.2.4 Whilst the above actions compensated for the potential effects to receptors identified through the Ecological Impact Assessment (EclA) process as detailed in the Ecology Chapter of the Proposed Development application, it was considered that additional offsite measures would be required to offset habitat loss and provide for biodiversity enhancement. These restoration and enhancement measures can no longer be delivered as part of the Proposed Development. The Applicant has therefore re-engaged with one of the principal landowners of the Proposed Development site and has agreed additional restoration and biodiversity enhancement measures within the Proposed Development site. This OHMP therefore supersedes and replaces the 2023 OHMP.
- 1.2.5 All the restoration and enhancement measures set out in this OHMP would be implemented within the application boundary of the Proposed Development. The Applicant has secured the necessary land rights for the implementation and long-term management of the restoration and enhancement measures.

1.3 Background

- 1.3.1 To support the planning submission for the Proposed Development and the assessment of effects on habitats and ecological and ornithological receptors, a suite of habitat, bird and terrestrial ecological surveys have been completed since 2018. They are reported in detail in Technical Appendices 8.1 to 8.4 and 9.1 of the Proposed Development's 2023 EIAR. Summaries of the survey results are provided below for context.

Ornithology

- 1.3.2 RPS produced an Ornithology Technical Appendix report containing bird survey results for 2018/19 (Year 1), 2020 (Year 2), and supplementary survey effort conducted in 2023. Survey results highlighted the presence of golden plover, golden eagle, white-tailed eagle, hen harrier, peregrine, curlew, green sandpiper, goshawk, marsh harrier, red kite, barn owl, merlin, honey buzzard and black grouse. The site is also overflown by small numbers of migrating waterfowl species such as whooper swan, pink-footed goose and Greenland white-fronted goose. Eighteen

Valued Ornithological Receptors (VORs) were identified from the 23 target species recorded. Of the 18 VORs only four warranted the requirement for collision risk modelling (golden eagle, hen harrier, white-tailed eagle and white-fronted goose). The potential for significant ornithological effects was assessed for these four species and the potential effects on the conservation status of these receptors were assessed to be not significant. The results for all survey years and survey types are summarised in Technical Appendix 9.1 of the 2023 EIAR.

Ecology

- 1.3.3 An assessment of the site's suitability to support bats was performed in September 2022 which concluded that the coniferous forestry plantation and/or recently felled woodland offered moderate quality foraging habitat for small numbers of foraging bats, however the many watercourses and waterbodies present across the site offered good foraging and commuting habitat with connectivity to surrounding areas. Static detector bat surveys were completed between May and September 2022. The results of these surveys are detailed in Technical Appendix 8.3 of the 2023 EIAR. In summary, five species of bat have been identified on site and it is concluded that the Proposed Development poses a medium risk to the local bat population.
- 1.3.4 Protected species surveys occurred between 06 and 09 June 2022, the detailed methods and results of these surveys are provided in Appendix 8.1 of the 2023 EIAR. In summary, surveys found:
- Habitats on site are suitable to support reptile species with an abundance of refugia present and a sighting of an adder and common lizard occurred during a survey;
 - The water courses within the site and 200m upstream/downstream are unsuitable for water vole;
 - The same water courses are suitable for otter and numerous otter field signs were recorded although only around the site margins and outwith the forestry plantation;
 - Habitats on site and within a 100m buffer are suitable for use by badgers with three potential badger setts recorded within the survey area;
 - Habitats on site and within a 100m buffer are suitable for pine marten, although no definitive field signs of the species were recorded; and
 - Habitats on site and within a 50m buffer are suitable for red squirrel although no definitive field signs of the species were recorded.
- 1.3.5 A Phase 1 Habitat Survey, National Vegetation Classification (NVC) and Ground Water Dependent Terrestrial Ecosystem (GWDTE) survey was completed by Botanaeco in September 2022 on RPS' behalf. Detailed results of the habitat surveys are provided in Technical Appendix 8.2 of the 2023 EIAR. Figure 3 provides the NVC survey results from the 2022 surveys and these are summarised in Table 1 below.

Table 1: 2022 Habitat Survey Results

Phase 1 habitat code & title	Area*		National Vegetation Classification code & title	Area*	
	Absolute (ha)	Relative (%)		Absolute (ha)	Relative (%)
A1.1.1 - Broadleaved woodland - semi- natural	3.6	0.3	n.a.	3.6	0.3
A1.1.2 - Broadleaved woodland - plantation	2.82	0.2	n.a.	2.82	0.2
A1.2.2 - Coniferous woodland - plantation	670.34	48.8	n.a.	670.34	48.8
A3.2 - Coniferous Parkland/scattered trees	0.35	0.0	n.a.	0.35	0.0
A4.2 - Coniferous woodland - recently felled	505.88	36.8	n.a.	505.88	36.8
B1.1 - Acid grassland - unimproved	6.2	0.5	U4a <i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i>	6.2	0.5

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Phase 1 habitat code & title	Area*		National Vegetation Classification code & title	Area*	
	Absolute (ha)	Relative (%)		Absolute (ha)	Relative (%)
			grassland, typical sub-community		
B1.1-B1.2 - Acid/neutral grassland mosaic	1.05	0.1	n.a.	1.05	0.1
B1.1-C1.1 - Acid grassland - bracken mosaic	0.63	0.0	U20a <i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community, <i>Anthoxanthum odoratum</i> sub-community	0.63	0.0
B1.2 - Acid grassland - semi-improved	3.62	0.3	U4b <i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Galium saxatile</i> grassland, <i>Holcus lanatus</i> - <i>Trifolium repens</i> sub-community	3.62	0.3
B2.1-D5 - Neutral grassland - acid grassland/heath mosaic	0.99	0.1	n.a.	0.99	0.1
B4 - Improved grassland	3.84	0.3	n.a.	3.84	0.3
B5 - Marsh/marshy grassland	1.32	0.1	M23a <i>Juncus effusus</i> - <i>acutiflorus</i> - <i>Galium palustre</i> rush- pasture, <i>Juncus acutiflorus</i> sub-community	0.34	0.0
			M23b <i>Juncus effusus</i> - <i>acutiflorus</i> - <i>Galium palustre</i> rush- pasture, <i>Juncus effusus</i> sub-community	0.98	0.1
C1.1 - Bracken - continuous	56.29	4.1	U20a <i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community, <i>Anthoxanthum odoratum</i> sub-community	55.74	4.1
			U20b <i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community, <i>Vaccinium myrtillus</i> - <i>Dicranum scoparium</i> sub-community	0.55	0.0
C1.1-D1.1 Bracken-dry heath mosaic	0.33	0.0	U20b <i>Pteridium aquilinum</i> - <i>Galium saxatile</i> community, <i>Vaccinium myrtillus</i> - <i>Dicranum scoparium</i> sub-community	0.33	0.0
D1.1 - Dry dwarf shrub heath - acid	5.11	0.4	H12a <i>Calluna vulgaris</i> - <i>Vaccinium myrtillus</i> heath, <i>Calluna vulgaris</i> sub-community	5.11	0.4
D1.1-E2.1 - Dry heath - flush mosaic	2.03	0.1	n.a.	2.03	0.1
D2 - Wet dwarf shrub heath	5.02	0.4	M15b <i>Trichophorum germanicum</i> - <i>Erica tetralix</i> wet heath, typical sub-community	5.02	0.4
D5 - Dry heath/acid grassland	2.43	0.2	n.a.	2.43	0.2
E1.6.1 - Blanket Sphagnum bog	55.65	4.1	M19a <i>Calluna vulgaris</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Erica tetralix</i> sub-community	55.65	4.1
E1.6.1-E2.1 - Blanket bog-acid flush mosaic	0.16	0.0	M19a <i>Calluna vulgaris</i> - <i>Eriophorum vaginatum</i> blanket mire, <i>Erica tetralix</i> sub-community	0.16	0.0
E1.7 - Wet modified bog	0.45	0.0	M25a <i>Molinia caerulea</i> - <i>Potentilla erecta</i> mire, <i>Erica tetralix</i> sub-community	0.45	0.0
E2.1 - Flush and spring - acid/neutral flush	15.18	1.1	M6c <i>Carex echinata</i> - <i>Sphagnum recurvum</i> /auriculatum mire, <i>Juncus effusus</i> sub-community	14.46	1.0
			M6d <i>Carex echinata</i> - <i>Sphagnum recurvum</i> /auriculatum mire, <i>Juncus acutiflorus</i> sub-community	0.72	0.1
I2.1 - Quarry	0.95	0.1	n.a.	0.95	0.1
J3.6 - Buildings	0	0.0	n.a.	0	0.0
Road	29.42	2.1	n.a.	29.42	2.1
Total:	1,373.66	100	Total:	1,373.66	100

Table Note:

*Area – Absolute is the area in Hectares that is covered by a particular habitat within the Proposed Development's boundary. Relative is the percentage of the total area within the Proposed Development's boundary that is covered by a particular habitat type.

- 1.3.6 Fisheries habitat surveys were completed by the Argyll Fisheries Trust through December 2022. These aimed to provide general information on the status of the instream and bankside habitats of the watercourses both within and adjacent to the site. A summary of the survey results is as follows:
- Stream habitats in the upper reach of the main channel of Abhainn Breacairigh and Conieglen Water consisted mostly of a mix of coarse substrates suitable for salmonid fish in lower and moderate gradient habitat.
 - The smaller patches of higher gradient habitat found in the main channels and most of the tributary streams (including the Lecknacreive Burn) are mostly unsuitable for salmonid fish.
 - The distribution of natural impassable obstacles to fish migration and historical fish survey data indicate that migratory salmonid fish can utilise the much of the Abhainn Breacairigh and Conieglen Water for spawning and juvenile nursery habitat. The major tributary of the Lecknacreive Burn and all minor tributaries are not accessible to migratory fish.
 - It is likely that the habitat upstream of the impassable obstacles support populations of resident brown trout and possibly European eel where habitat is suitable.
 - The habitat in the Homeston Burn (Conieglen Water) may be suitable for freshwater pearl mussel (*Margaritifera margaritifera*), but the instability of riverbed substrates in Abhainn Breacairigh and Lecknacreive Burn is unlikely to support mussels.
- 1.3.7 Detailed results of the fisheries habitat surveys are provided in Technical Appendix 8.4 of the 2023 EIAR.

2 EFFECTS TO RECEPTORS

2.1 Identified Potential Effects

2.1.1 The following impacts and associated effects to Important Ecological Features (IEFs) and Important Ornithological Features (IOFs) identified in Chapter 8: Ecology and 9: Ornithology of the 2023 EIAR are summarised in Tables 2 and 3 below.

Table 2: Summary of Potential Effects to IEFs from the Proposed Development

Receptor	Development Phase	Potential Impact	Magnitude of Impact	Summary of Predicted Effect
Habitats	Construction	Permanent loss of coniferous plantation	Moderate	Minor
Habitats	Construction	Permanent loss of habitats including blanket bog	Low	Minor
Habitats	Construction	Potential disturbance to GWDTE habitats	Low	Minor
Protected Species	Construction	Unintentional disturbance/injury/death of otter, badger, pine marten and red squirrel.	Low	Negligible
Watercourses and aquatic receptors	Construction	Impacts to water quality from run-off (impacting fish populations)	Low	Minor
Reptiles	Construction	Unintentional injury/death of reptile species	Low	Minor
Protected Species	Operational	Unintentional disturbance/injury/death of otter, badger, pine marten and red squirrel.	Low	Minor
Bats	Operational	Turbine collision/barotrauma	Moderate	Moderate
Habitats	Operational	Damage to habitats/watercourses from pollution events	Low	Minor

Table 3: Summary of Potential Effects to IOFs from the Proposed Development

Receptor	Development Phase	Potential Impact	Magnitude of Impact	Summary of Predicted Effect
Greenland white-fronted goose	Operational	Collision Risk	Low	Negligible
Golden Eagle	Operational	Collision Risk	Low	Negligible
Hen harrier	Operational	Collision Risk	Low	Negligible
White tailed Eagle	Operational	Collision Risk	Low	Negligible
Pink-footed goose	Operational	Collision Risk	Negligible	Negligible
Greylag goose	Operational	Collision Risk	Negligible	Negligible
Whooper swan	Operational	Collision Risk	Negligible	Negligible
Black grouse	Operational	Collision Risk	Low	Negligible
Golden plover	Operational	Collision Risk	Negligible	Negligible
Curlew	Operational	Collision Risk	Low	Negligible
Green sandpiper	Operational	Collision Risk	Negligible	Negligible
Goshawk	Operational	Collision Risk	Low	Negligible
Marsh harrier	Operational	Collision Risk	Negligible	Negligible
Honey buzzard	Operational	Collision Risk	Low	Negligible
Red kite	Operational	Collision Risk	Negligible	Negligible
Barn owl	Operational	Collision Risk	Negligible	Negligible
Merlin	Operational	Collision Risk	Low	Negligible
Peregrine	Operational	Collision Risk	Low	Negligible

All effects to IOFs from the construction phase of the proposed development were assessed as negligible and so have not been included in the above table.

2.1.2 Further to the potential significance of the effects identified through the Ecological Impact Assessment (EcIA) process completed in the EIAR documents, the quantum of habitat to be affected by the construction of the Proposed Development was assessed. This assessed habitat losses, disturbance (be that temporary or of a permanent nature) and any potential indirect effects

to habitats which might cause changes to their quality or species composition. Table 4 provides a summary of this assessment.

Table 4: Summary of Habitat Loss and Change Through Construction and Operation of the Proposed Development (Ecology ES, 2023)

Phase 1 Habitat Code and Title	Permanent Direct Habitat Loss (ha)	Temporary Direct Habitat Loss (ha)	Permanent Indirect Habitat Change (ha)	Total Area of Habitat Affected (ha)	Total Area of Habitat Within Site (ha)	% of Total Habitat Within Site Affected
A1.1.2 - Broadleaved woodland - plantation	0.19	0.23	n/a	0.42	46.49	0.90%
A1.2.2 - Coniferous woodland - plantation	7.34	12.45	n/a	19.79	800.17	2.47%
A4.2 - Coniferous woodland - recently felled	8.24	10.00	n/a	18.24	514.25	3.55%
B1.1 - Acid grassland - unimproved	0.02	0.07	n/a	0.09	6.84	1.32%
B4 - Improved grassland	0.01	0.07	0.04	0.12	42.00	0.29%
B5 - Marsh/marshy grassland	0.09	0.07	0.26	0.42	35.77	1.17%
C1.1 - Bracken - continuous	0.12	0.43	0.01	0.56	99.88	0.56%
D1.1 - Dry dwarf shrub heath - acid	0.01	0.03	n/a	0.04	7.47	0.54%
D2 - Wet dwarf shrub heath	0.10	0.27	n/a	0.37	5.02	7.37%
E1.6.1 - Blanket <i>Sphagnum</i> bog	0.58	0.83	n/a	1.41	253.55	0.56%
E2.1 - Flush and spring - acid/neutral flush	0.32	0.97	n/a	1.29	24.12	5.35%
I2.1 - Quarry	0.00	0.06	n/a	0.06	0.94	6.38%
Total	17.02	25.48	0.31	42.81		

In addition to the above effects to habitats from the wind farm infrastructure, keyhole areas will be created in the forestry plantation at each turbine location and to create access to the temporary construction compound. The total area of this permanently felled coniferous plantation woodland will be 53.51ha. Other habitats present within these keyholes are not expected to be affected.

2.1.3 Considering the above provided in Table 4, key issues associated with construction and operation of the Proposed Development are effects to 1.41ha of blanket bog habitats, those to 1.29ha of flush / spring habitat, and the felling and loss of coniferous plantation both for the direct footprint of the development (19.79ha of coniferous woodland – plantation, 18.24ha of coniferous woodland – recently felled) and the buffer key hole areas surrounding the wind turbine locations (53.51ha of coniferous woodland – plantation). This equates to a total of 91.54 ha of coniferous woodland plantation loss.

2.1.4 A future Long Term Forestry Plan (LTFP) will set out the future long term forestry plans for the site and the compensatory planting that is required for the Proposed Development. Figure 4 provides the current restocking plan for the area considering the wind farm infrastructure. Note, this does include native broadleaved woodland retention and expansion to provide increases to biodiversity, in particular black grouse.

2.2 Peatland Restoration Requirements

2.2.1 Table 4 details that c.1.4ha of blanket bog habitat will be affected by the Proposed Development. The Chapter 8: Ecology of the 2023 EIAR submission and Table 1 of this HMP detail the National Vegetation Classification (NVC) communities that are present within the blanket bog habitat type, namely:

- M19a *Calluna vulgaris*-*Eriophorum vaginatum* blanket mire, *Erica tetralix* sub-community;

- M25a *Molinia caerulea-Potentilla erecta* mire, *Erica tetralix* sub-community.

2.2.2 Both communities, and those of the flush habitats and wet heath habitats, could also be considered “peatland”. These were considered to be of local importance in the context of the EclA process.

2.2.3 In consideration of NatureScot’s guidance on a 1:10 ratio for peatland restoration, if only blanket bog habitats are to be considered (1.41ha), then an area of at least 14.1 ha would need to be restored to compensate for the effects of the Proposed Development. If those peatland habitats were extended to include flush and wet heath habitats which include the NVC communities:

- M15b *Trichophorum cespitosum-Erica tetralix* wet heath, typical sub-community;
- M6c *Carex echinata-Sphagnum fallax/denticulatum* mire, *Juncus effusus* sub-community;
- M6d *Carex echinata-Sphagnum recurvum/auriculatum* mire, *Juncus acutiflorus* sub-community,

then an area of 3.07ha would be affected by the Proposed Development and an area of 30.7ha should be considered appropriate for peatland restoration to offset the loss of peatland to the Proposed Development. It should be noted that these areas include permanent direct habitat loss, temporary direct habitat loss and permanent indirect habitat change. The 30.7ha figure therefore represents a conservative approach to compensation for potential effects on peatland habitats.

2.2.4 Peatland restoration proposals in the 2023 OHMP provided for c.7ha of peatland restoration (offsetting permanent blanket bog loss but not temporary or other losses / effects to other peatland habitats). This OHMP sets out measures for the restoration of areas where forestry is currently planted on deep peat soils. A total area of 37.7 ha of peatland restoration is provided, including c30.7ha to offset habitat loss and c7ha of additional biodiversity enhancement.

2.3 Biodiversity Net Gain Requirements

2.3.1 NPF4 Policy 3b sets out that an EIA or major development, such as the Proposed Development, should provide significant biodiversity enhancement such that biodiversity is in a demonstrably better state than without intervention. However, in Scotland there is as yet no official metric provided by the statutory authority (NatureScot) to be able to quantify the net gain provided by a development, or the baseline from which the net gain should be calculated from prior to construction of the development.

2.3.2 Scottish and Southern Energy Networks (SSEN) have created a metric which is suitable for use in a Scottish context to assess the potential biodiversity gains and losses for developments through the calculation of Biodiversity Units (BUs)¹ present on site prior to the development, those that will be lost through construction and operation of a development, and the value of compensation and enhancement measures to increase the number of BUs present within a site (and therefore the overall Biodiversity Net Gain (BNG) attributable to any development). This metric has been used to assess the BNG baseline of the site, the losses from the Proposed Development, and therefore the Biodiversity Units (BUs) which need to be created to achieve net gain for the Proposed Development, and thereby a quantifiable number to the biodiversity enhancement the Proposed Development will deliver.

2.3.3 The assessment makes a number of assumptions within the metric with regards to the condition of the habitats present, their connectivity within the landscape and their conservation significance. These assumptions are based on the professional opinion of this report’s author. However, the construction of the Proposed Development will cause an initial decrease in the BUs present at the site; a predicted loss of 178.94 BUs. This loss of biodiversity units will need to be compensated for, then additional enhancement achieved to provide a significant enhancement to biodiversity as required by NPF4.

¹ Biodiversity Units are calculated based on the type, quality and conservation value of a particular habitat type. Those habitats of greater conservation value, rarity or quality (condition) will carry a greater biodiversity unit value. These are measured per hectare to allow calculations of losses and gains to be undertaken. The completed metric spreadsheet is provided alongside this document.

2.3.4 To achieve BNG for the Proposed Development it is proposed that:

- 30ha of peatland restoration will be completed within the site boundary through forest to bog restoration. This will meet the requirements of NatureScot peatland restoration requirements providing a 1:10 ration of loss to restoration. This action has considered the peat depths across the site provided in Figure 6 and the Long Term Forestry Management Plan for the area. This proposed peatland restoration area is shown in Figure 7.
- The 7ha of peatland restoration as proposed in the Proposed Development's OHMP will be completed of The Slate which will provide additional enhancement over and above the requirements of the NatureScot 1:10 loss to restoration ratio.

2.3.5 These two measures will provide a total of 37ha of peatland restoration. Using the current redline boundary and the SSEN BNG metric this provides a 4%² uplift to the BUs present at the site and achieves onsite enhancement to biodiversity. Moreover, the quantum of restoration is in excess of the 30ha required to meet the NatureScot guidance for effects to peatland habitats and the additional 7ha provides significant biodiversity enhancement (Section 2.2). Table 5 summarises the BUs and percentage change considering the output of the BNG metric.

Table 5: Potential Biodiversity Unit Uplift for Mitigation, Compensation and Enhancement Elements of the Proposed Development

Biodiversity Unit Assessment		
Development Phase	Biodiversity Units	% Change from Baseline
Site Baseline	5264.2635	0%
Post Construction Prior to Peatland Restoration Measures	5085.324	-3%
Post Construction on Completion of Peatland Restoration Measures	5472.136	4%

² If the Proposed Development's redline boundary were decreased to cover the developable area only of the Proposed Development rather than the much wider conifer plantation the percentage uplift would proportionally increase (although not the number of BUs).

3 AIMS AND OBJECTIVES

3.1 Background

- 3.1.1 This OHMP provides mitigation and compensation for the effects of the Proposed Development to habitat and ecological and ornithological receptors, as summarised in Tables 2, 3 and 4, and provides additional significant enhancement to the biodiversity of the site. The primary measures relate to restoration of peatland habitat.
- 3.1.2 The following Objectives and Management Actions detail the measures to be implemented to achieve this.

3.2 Aim 1: Reduce Suitability of Permanently Open Areas for Hen Harrier

- 3.2.1 Although no significant effects to hen harrier have been predicted from the construction or operation of the Proposed Development, hen harrier are known to be present in the wider area. Consequently, habitat management actions will be implemented to reduce the risk of attracting the species to areas of potential collision risk which keyholing of plantation forestry might create.

Management Actions

Table 6: Summary of Proposed Objectives and Management Actions for Aim 1

Objective	Description
1.1	In areas key-holed for turbines or any open areas within 500m of turbine locations, vegetation heights will be managed where deemed necessary via mechanical means to achieve a maximum height of 30cm.
1.2	The density of regenerating conifers will be limited to less than 100 stems/ha with no stems of a height greater than 0.5m.
1.3	In borrow pit areas where peat of a depth greater than 50cm has been deposited during reinstatement activities, wetter surface conditions will be created. This is defined as greater than 70% vegetation cover comprising of blanket bog habitats and within 5 years of treatment.

Monitoring Activities

Table 7: Summary of Proposed Monitoring Activities for Aim 1

Objective	Monitoring Method
1.1	Annual monitoring of vegetation heights in key-holed areas and those within 500m of turbine locations will be carried out through the first 5 years of operation of the Proposed Development whilst vegetation recolonisation of felled areas takes place. Following this, monitoring will be completed every five years for the remaining duration of the Proposed Development's lifespan. Since vegetation varies seasonally, vegetation height will be measured during September/October before nesting sites are being sought. A drop disc survey technique will be used to gain a smoother maximum (i.e. ignoring occasional tall seed heads), where a 30cm diameter weighted disc is dropped down a 1m ruler and the measurement taken to ground level. Any patches of vegetation taller than 30cm vegetation height deemed suitable to accommodate a hen harrier nest will be highlighted in an annual report and marked for management.
1.2	Annual monitoring of regenerating conifers in key-holed areas and within 500m of wind turbine locations will be undertaken annually through the first five years of operation of the Proposed Development and management requirements highlighted. Ongoing requirements post the initial five-year period will be considered based on the management and regeneration rates recorded to ensure management is proportionate to the meet the overarching Aim.
1.3	Annual monitoring of borrow pit areas where wetter conditions are created will be undertaken for the first five years of the operational period of the Proposed Development. Following this period, further monitoring will be considered based on the results of the initial monitoring period.

3.3 Aim 2: Forestry Management to Benefit Black Grouse and Golden Eagle

- 3.3.1 Although no significant effects to black grouse and golden eagle have been predicted from the construction or operation of the Proposed Development, these species are known to be present on

occasion within the development area and the wider landscape. Consequently, forestry management actions will be implemented to benefit both species to create breeding and foraging grounds to enhance the site and ultimately increase biodiversity.

Management Actions

Table 8: Summary of Proposed Objectives and Management Actions for Aim 2

Objective	Description
2.1	Heather management: creation of a mosaic of heather stands to provide nest sites, feeding and cover. Methods provided by NatureScot ³
2.2	Provide open space with native broadleaves around edges and open ground
2.3	Pulling plantation back from any areas of good black grouse and golden eagle foraging habitat

Monitoring Activities

Table 9: Summary of Proposed Monitoring Activities for Aim 2

Objective	Monitoring Method
2.1	Long term monitoring of the vegetation response from woodland management. Monitoring will be completed in years 5, 10, 15 and 25 of the Proposed Development's operational phase to track the improvement in vegetation type and inform any changes / management required to maintain the habitat in a suitable condition for the target species.
2.2	Surveys for the presence of black grouse within any identified or created suitable habitat. Surveys will be completed in years 1, 3, 5, 10, 15 and 25 of the Proposed Development's operational phase.
2.3	Breeding raptor and targeted golden eagle surveys. Surveys will be completed in years 1, 3, 5, 10, 15 and 25 of the Proposed Development's operational phase.

3.4 Aim 3: Restoration of Thirty-Seven Hectares of Degraded Peatland Habitat to Compensate for the Potential Effects of the Development to Peatland Habitats and Provide Enhancement to Site Biodiversity

- 3.4.1 A peatland condition assessment coupled with peat probing of the Proposed Development area was carried out as part of the 2023 Proposed Development's application to highlight potential areas where peatland restoration could be implemented. This mapped areas of deep peat and identified areas of degraded peatland suitable for restoration (full results can be found in Technical Appendix 8.2 of the 2023 EIAR). Surveys identified a non-afforested area known as "The Slate" which exhibited features of an eroded / degraded peatland which would be suitable for restoration. Further to this open ground area, peat probing identified an area of approximately 30ha of afforested peatland (peat depth up to 5m) which similarly would be suitable for restoration. As detailed in Section 2 of this document, these areas will be restored to offset habitat loss and provide additional habitat enhancement for the Proposed Development. The location of these areas is provided in Figure 7.

³ <https://www.nature.scot/muirburn-code>; <https://snh1wfhjxuubf.devcloud.acquia-sites.com/doc/information-and-advisory-note-58-cutting-heather-alternative-muirburn>

Management Actions

Table 10: Summary of Proposed Objectives and Management Actions for Aim 3

Objective	Description
3.1	In year 1 post construction, identify at The Slate ~7 ha of ground suitable for peatland restoration. Land will be deemed as suitable in adherence with the IUCN Peatland Code Field Protocol (Version 2, published March 2023). Develop a site restoration plan to include site-specific restoration techniques appropriate for the features present which might include hag reprofiling, ditch and drain blocking and installation of dams. The methods used will draw on the most up to date techniques in this field which are constantly improving and evolving.
3.2	In year 2 post construction, implement restoration activities of the identified restoration area through a suitably skilled specialist contractor. Methods of restoration will be tailored to the feature identified in the restoration area. Follow up surveys of all restoration activities will be undertaken six months post-restoration works to ensure all works are secure and no remedial works are required.
3.3	Implementation of the Deer Management Plan (DMP) produced as part of the Long-Term Forest Plan (LTFP) in 2009, which outlines the measures to be implemented in estimating, controlling, and monitoring deer populations during and post-construction to ensure that deer numbers are appropriate. This will allow the development of peatland habitats within the site. A Grazing Management Plan should be produced if there is livestock present within the area to be restored, and consideration given to installation of adequate fencing to exclude deer/livestock.
3.4	In line with the LTFMP fell in 2028 the area of plantation on deep peat (c.30ha). The area will be restored using appropriate techniques 1 year post felling.

Monitoring Activities

Table 11: Summary of Proposed Monitoring Activities for Aim 3

Objective	Monitoring Method
3.1	Baseline vegetation monitoring will be completed across the proposed restoration area to ascertain the species assemblages present prior to restoration activities commencing. Vegetation and hydrological monitoring will be completed in years 1, 5 and 10 post restoration to detail the alterations in vegetation communities present and the success of raising / retaining the water table in the area. If necessary, where monitoring identifies additional restoration works are required to ensure successful compliance with the Objective, follow up activities will be completed the year following monitoring surveys. All actions and monitoring will be reported to the Habitat Management Group. If deemed necessary post – year 10 monitoring, further actions and monitoring will be considered through the remainder of the lifespan of the development to ensure restoration actions are successful in achieving their aims.
3.2	An Ecological Clerk of Works will be employed to oversee the restoration works ensuring this is completed in a sensitive manner following best practice guidance.
3.3	As outlined in the DMP, annual fixed-point photography and bark-stripping assessments will be used to indicate deer population size and utilisation of the site. The assessment method will be via the Nearest Neighbour method which quantifies wildlife damage to trees in woodland ⁴ . This, coupled with a standard description of the site to reflect floral features, natural regeneration and browsing impacts will evaluate deer utilisation of the area. Cull records for stalking activities within the site will also be considered. All actions and monitoring will be reported to the Habitat Management Group. If deemed necessary post – year 10 monitoring, further actions and monitoring will be considered through the remainder of the lifespan of the development to ensure restoration actions are successful in achieving their aims.
3.4	An Ecological Clerk of Works will be employed to oversee the restoration works ensuring this is completed in a sensitive manner following best practice guidance. Vegetation and hydrological monitoring will be completed in years 1, 5 and 10 post restoration to detail the alterations in vegetation communities present and the success of raising / retaining the water table in the area. If necessary, where monitoring identifies additional restoration works are required to ensure successful compliance with the Objective, follow up activities will be completed the year following monitoring surveys.

3.5 Aim 4: Reduce the Attractiveness of Open Areas and Boundary Features for use by Bats as Foraging and Commuting Flightlines

- 3.5.1 Without appropriate mitigation, potentially significant effects to bat species from operation of the Proposed Development have been identified (Table 2). Consequently, measures to reduce the

⁴ Pepper (1998). Nearest Neighbour Method for Quantifying Wildlife Damage to Trees in Woodland. Practice Note. Forest Research, Surrey.

suitability of habitats in proximity to wind turbines and areas of potential risk will be implemented to reduce any potential effects to bat species.

Management Actions

Table 12: Summary of Proposed Objectives and Management Actions for Aim 4

Objective	Description
4.1	Turbine keyholes will meet the requirements of the appropriate NatureScot guidance (NatureScot, 20195) with regards to bats and stand-off distances of turbines from features that will be used by bats for foraging and commuting flightlines. The precise buffer distance which takes turbine specification into account can be calculated using a formula detailed in Technical Appendix 8.3.
4.2	Key-hole edges will be "feathered" rather than creating a standing wall of timber to reduce the attractiveness of potential flight-line features to bat species.
4.3	New lighting at permanent structures that are adjacent to woodland edge (i.e. the substation) will be sensitively designed for bat species using the area for commuting and foraging. Lighting should be hooded and directed where needed to avoid unnecessary light spillage; low level lighting such as LEDs are preferable as they reduce the levels of light spillage; and, lighting should only operate until 22.00hr, this being considered to allow sufficient 'dark periods' thereafter in which bat species can forage undisturbed.

Monitoring Activities

Table 13: Summary of Proposed Monitoring Activities for Aim 4

Objective	Monitoring Method
4	Carcass searches will be completed on a monthly basis in years 1 and 2 in the bat activity season (May to October, inclusive) beneath turbines to assess if the measures that are being implemented are successfully reducing mortality of the species. Mitigation will then be adjusted where appropriate and deemed necessary.

⁵ NatureScot (2019) Bats and Onshore Wind Turbines: Survey Assessment and Mitigation. Version: January 2019.

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Figure 6: Interpolated Peat Depth Map

Figure 7: Habitat Management Plan Peatland Restoration Areas (2024)

Appendix A

Gantt Chart of Objectives and Monitoring Implementation

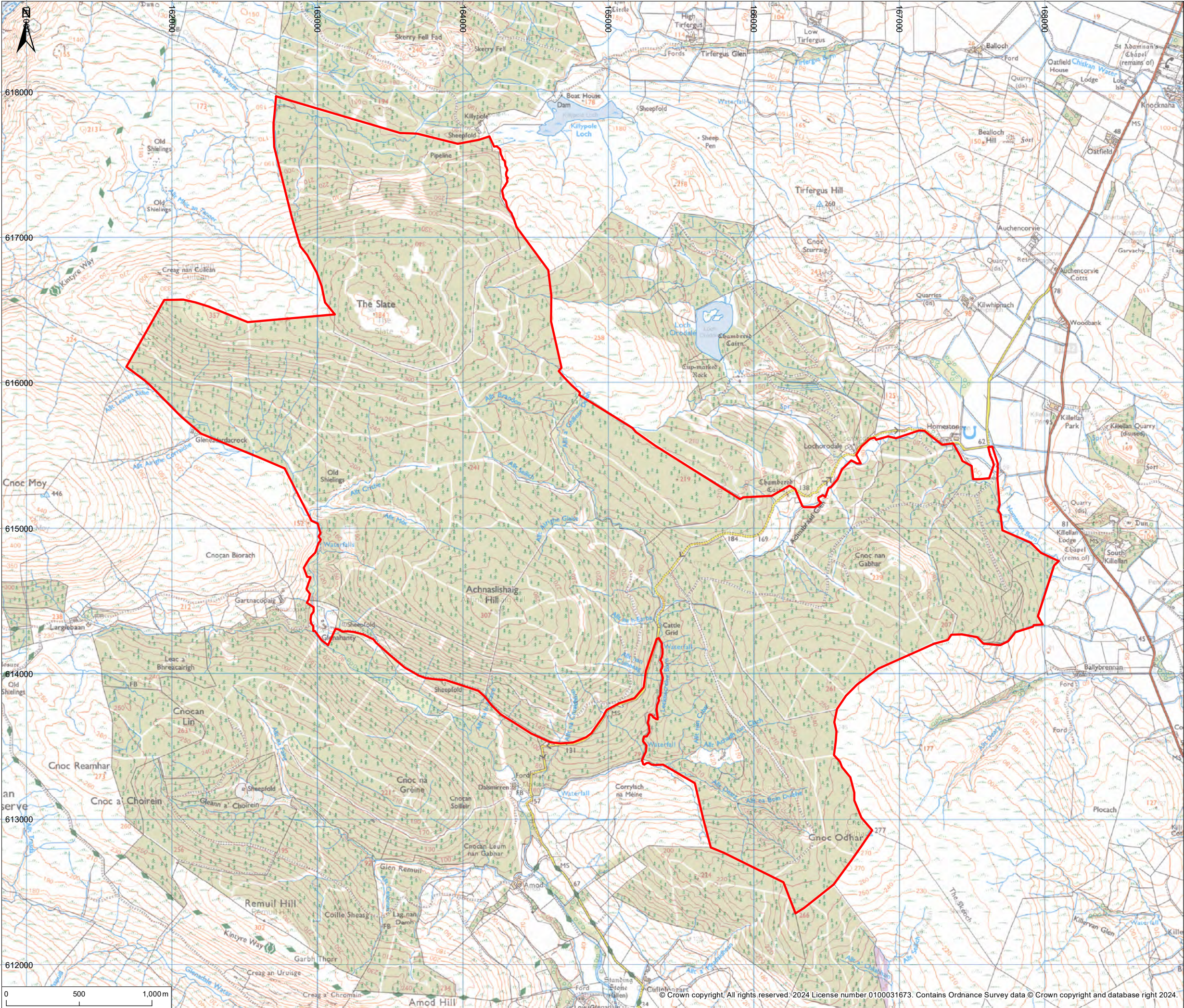
Summary of HMP Objectives and Monitoring

			Post-Construction									
Objective		Monitoring Method	1	2	3	4	5	10	15	20	25	35
1.1	Manage vegetation heights through mechanical means to achieve a maximum height of 30cm	Annual monitoring of vegetation heights to be completed through the first 5 years of operation, then every 5 years for the remaining operational period.										
1.2	Limit regenerating conifers to a maximum of 100 stems / ha and of a maximum height of 0.5m	Annual monitoring of regenerating conifer heights to be completed through the first 5 years of operation. Following this period, the requirements for ongoing monitoring will be reviewed.										
1.3	Creation of wet surface conditions where peat is used to reinstate borrow pits and a depth of greater than 0.5m of peat is present	Annual monitoring of borrow pits to be completed through the first 5 years of operation. Following this period, the requirements for ongoing monitoring will be reviewed.										
2.1	Heather management: creation of a mosaic of heather stands to provide nest sites, feeding and cover.	Long term monitoring of the vegetation response from woodland management. Monitoring will be completed in years 5, 10 ,15 and 25 of the Proposed Development's operational phase to track the improvement in vegetation type and inform any changes / management required to maintain the habitat in a suitable condition for the target species.										
2.2	Provide open space with native broadleaves around edges and open ground.	Surveys for the presence of black grouse within any identified or created suitable habitat. Surveys will be completed in years 1, 3, 5, 10, 15 and 25 of the Proposed Development's operational phase.										
2.3	Pulling plantation back from any areas of good black grouse and golden eagle foraging habitat.	Breeding raptor and targeted golden eagle surveys. Surveys will be completed in years 1, 3, 5, 10, 15 and 25 of the Proposed Development's operational phase.										
3.1	Assess the area of The Slate to determine the appropriate restoration measures to improve the quality of the degraded peatland habitats present.	Vegetation and hydrological monitoring to be implemented in years 1, 5 and 10 of the Operational Phase of the development. Ongoing monitoring requirements will be reviewed on completion of year 10 monitoring.										

REPORT

			Post-Construction									
Objective		Monitoring Method	1	2	3	4	5	10	15	20	25	35
3.2	Complete capital restoration works of at the Slate restoration area, tailored to the site, by an appropriately skilled contractor.	An Ecological Clerk of Works will be present to oversee the restoration works and identify any remedial works 6-month post-restoration to ensure the successful implementation of the restoration.										
3.3	Implement a Deer Management Plan produced in collaboration with the LTFMP to estimate and control deer to an appropriate level for the habitats present.	Monitoring of deer impacts and populations within the Proposed Development's redline boundary will be completed in years 1, 5 and 10. Ongoing monitoring requirements post year 10 will be reviewed based on the data collected.										
3.4	In line with the LTFMP fell and restore c.30ha of conifer plantation on areas of deep peat.	An Ecological Clerk of Works will be present to oversee the restoration works and identify any remedial works 6-month post-restoration to ensure the successful implementation of the restoration. Vegetation and hydrological monitoring will be completed in years 1, 5 and 10 following restoration works. Ongoing monitoring requirements post year 10 will be determined by the data collected										
4.1	Turbine keyholes will meet the requirements of the appropriate NatureScot guidance (NatureScot, 2019) with regards to bats and stand-off distances of turbines from features that will be used by bats for foraging and commuting flightlines.	Carcass searches will be completed on a monthly basis in years 1 and 2 in the bat activity season (May to October, inclusive) beneath turbines to assess if the measures that are being implemented are successfully reducing mortality of the species. Mitigation will then be adjusted where appropriate and deemed necessary.										
4.2	Key-hole edges will be "feathered" rather than creating a standing wall of timber to reduce the attractiveness of potential flight-line features to bat species.											
4.3	New lighting at permanent structures that are adjacent to woodland edge (i.e. the substation) will be sensitively designed for bat species using the area for commuting and foraging.											

W:\794-ENV-ECO-2\624 Breackerie WF PLUTechnical\Graphics\GIS\HMP Figure 1 - Site Location Plan.mxd



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Legend

Site Boundary



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Rev	Description	By	CB	Date



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Client **EnergieKontor**

Project **Breackerie Wind Farm**

Title **Site Location Plan**

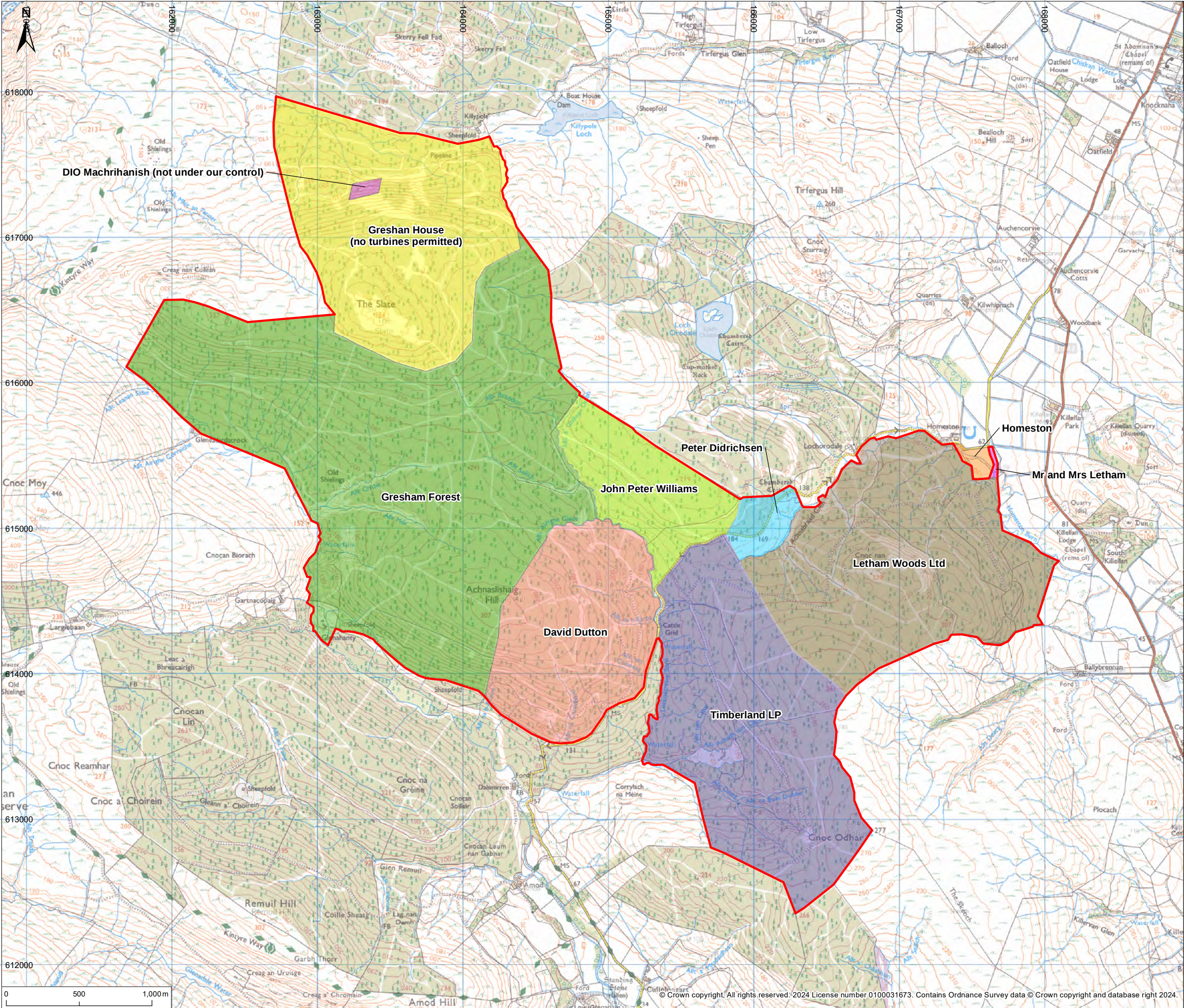
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Project Number **ECO21624** Scale @ A3 **1:25,000** Date Created **OCT 2024**

Figure Number **1** Rev **-**

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W:\794-ENV-ECO-2\624 Breackerie WF PLU\Technical\Graphics\GIS\HMP Figure 2 - Landownership Plan.mxd



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Site Boundary



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Client **EnergieKontor**

Project **Breackerie Wind Farm**

Title **Landownership Plan**

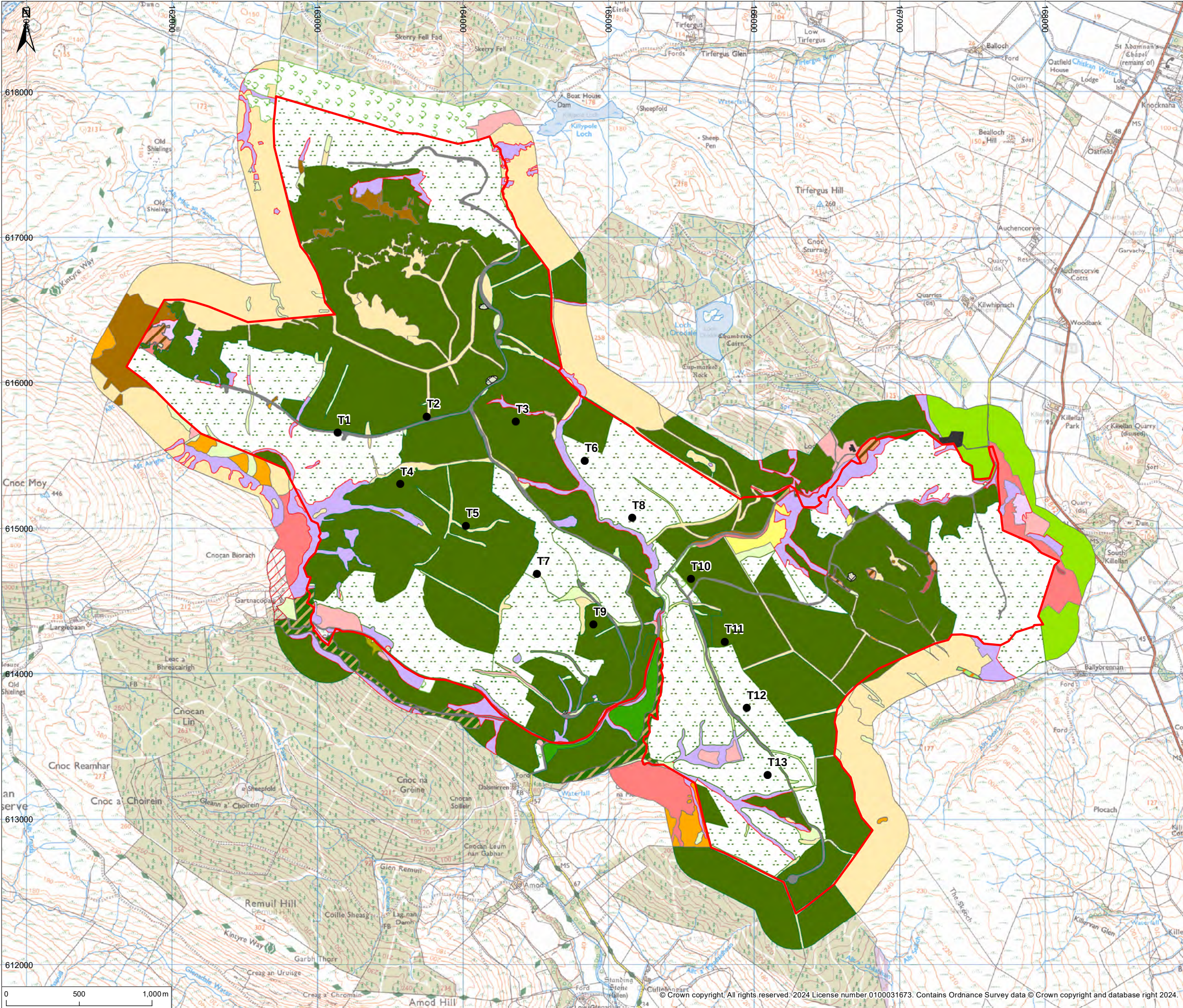
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Figure Number **2** Rev **-**

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W:\794-ENV-ECO-2\624 Breakerie WF PLUTechnical\Graphics\GIS\HMP Figure 3 - National Vegetation Classification (NVC) Survey Results (2022).mxd



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Legend

- Site Boundary
- Proposed turbines
- Dominant NVC communities
 - H12
 - M6
 - M15
 - M19
 - M23
 - M25
 - MG10a
 - U20a
 - U20
 - U4
 - U4a
 - W7
 - Broadleaved woodland - semi-natural
 - Coniferous Parkland/scattered trees
 - Coniferous woodland - recently felled
 - Plantation - Broadleaved
 - Plantation - Coniferous
 - Plantation - Mixed woodland
 - Improved grassland
 - Quarry
 - Buildings
 - Road
 - Not accessed land

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Client **EnergieKontor**

Project **Breakerie Wind Farm**

Title **National Vegetation Classification (NVC) Survey Results (2022)**

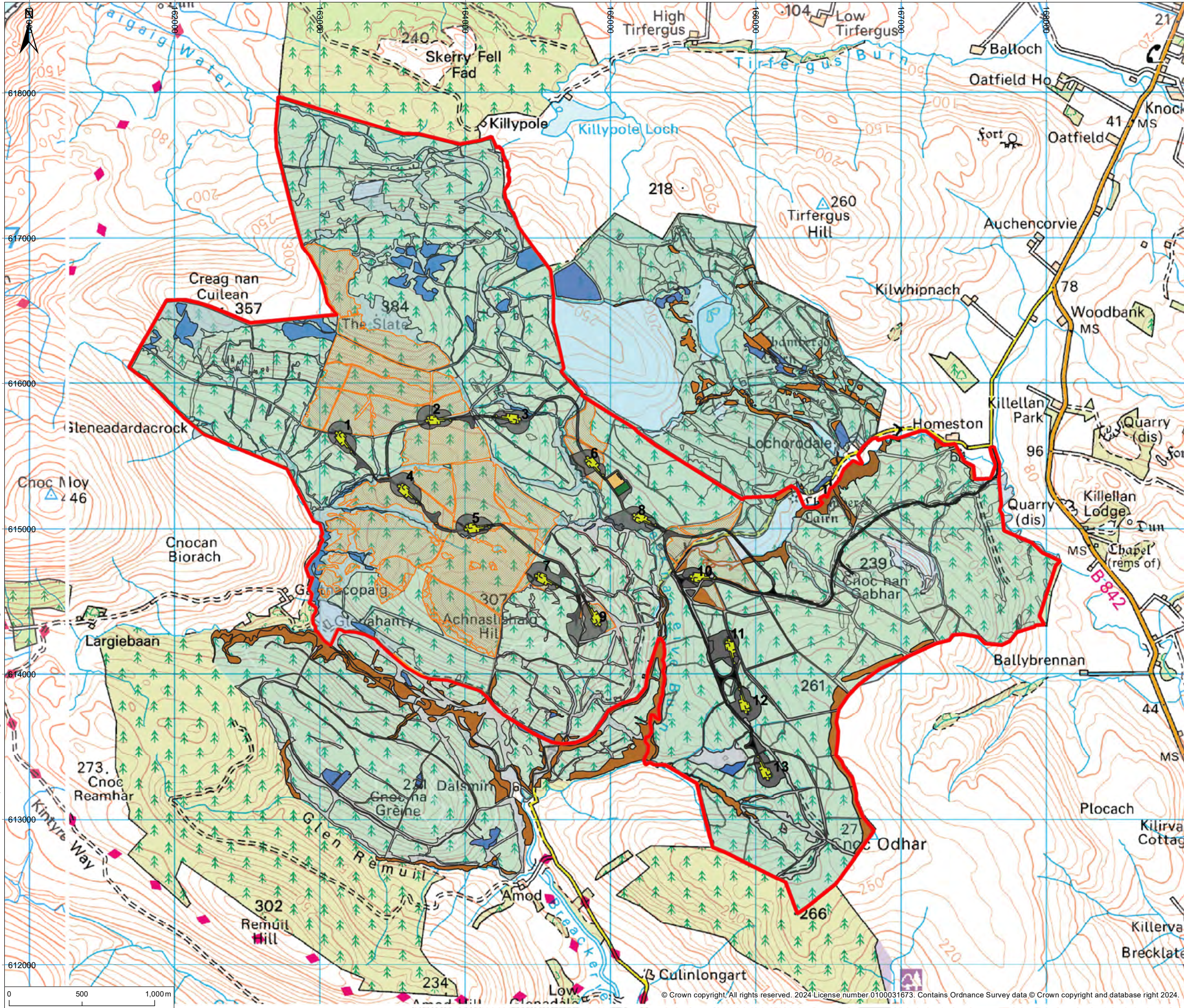
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Figure Number **3** Rev **-**

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W:\794-ENV-ECO-2\624 Breakerie WF PLU\Technical\Graphics\GIS\HMP Figure 4 - Wind Farm Restocking Plan.mxd



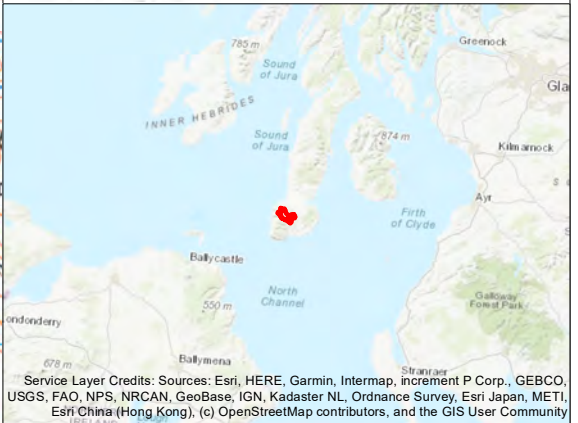
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Legend

- Site boundary
- Turbine Layout
- Tracks
- Turbine compounds
- Turning Heads
- Construction Compound
- 132kV Substation
- Wind farm Open ground
- Restocking management felled
- Productive conifer
- Conifer Long Term Retention
- Native broadleaved Long Term Retention
- Open ground



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Client **EnergieKontor**

Project **Breakerie Wind Farm**

Title **Wind Farm Restocking Plan**

Status **Issue** Drawn By **PJ** PM/Checked By **SL**

Project Number **ECO21624** Scale @ A3 **1:25,000** Date Created **OCT 2024**

Figure Number **4** Rev **-**

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W:\794-ENV-ECO-2\624 Breakerie WF PLU\Technical\Graphics\GIS\HMP Figure 5 - Outline Habitat management Plan Peatland Restoration Proposals (2023).mxd



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Legend

- Site Boundary
- Potential peatland restoration area
- Proposed Layout**
 - Proposed turbines
 - Proposed tracks
 - Crane pad
 - Turning heads
 - Substation
 - Construction Compounds
 - Existing borrow pits
 - New and upgraded watercourse crossings
 - Existing watercourse crossings

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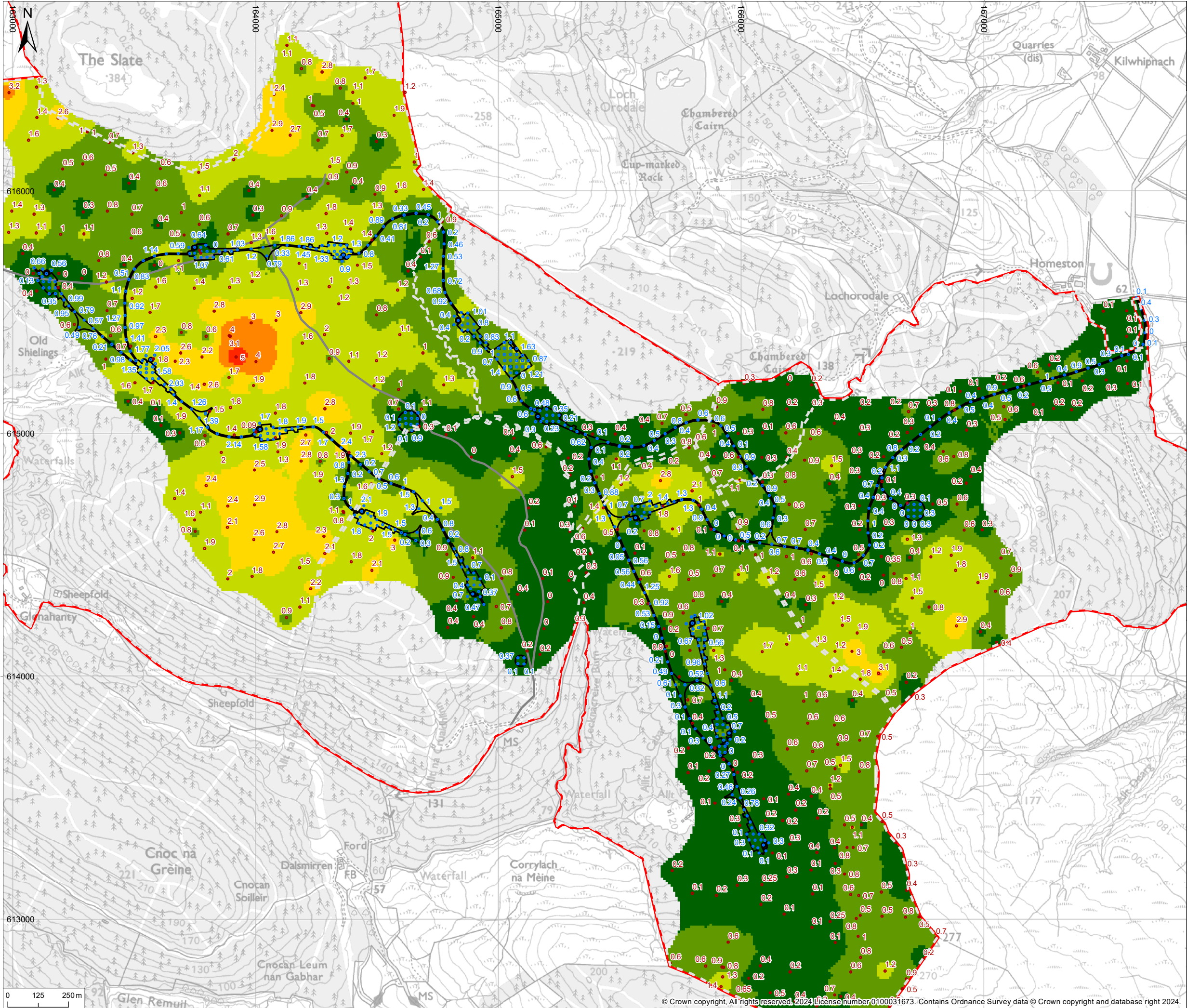
Client 

Project Breakerie Wind Farm
Outline Habitat management
Plan Peatland Restoration
Proposals (2023)

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Issue	MP	SL
Project Number	Scale @ A3	Date Created
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Figure Number		Rev
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Legend

- Option
- Proposed turbines
- Landowners areas

Recorded probe peat depth (m)

- Phase 1
- Phase 2

Interpolated peat depth (m)

- 0 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0

Rev	Description	By	CB	Date



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Client **EnergieKontor**

Project **Breackerie Wind Farm**

Title **Interpolated Peat Depth Map**

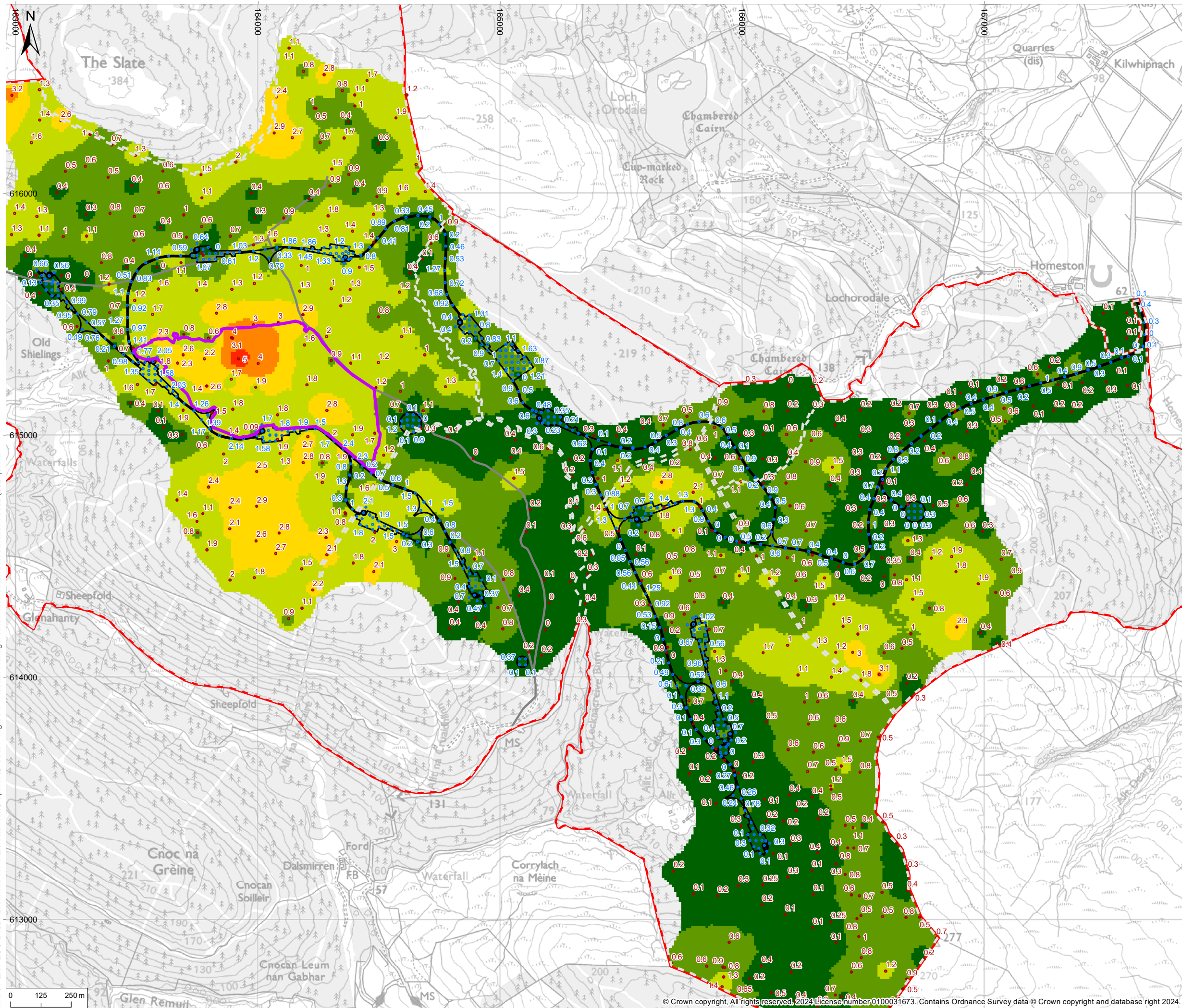
Status **Issue** Drawn By **MP** PM/Checked By **SL**

Project Number **ECO21624** Scale @ A3 **1:15,000** Date Created **OCT 2024**

Figure Number **6** Rev **-**

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W:\794-ENV-ECO-2\624 Breackerie WF PLU\Technical\Graphics\GIS\HMP Figure 7 - Habitat Management Plan Peatland Restoration Areas (2024).mxd



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Notes

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2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

Legend

- Option Area
- Proposed turbines
- Existing tracks
- Landowners areas
- Forest to Bog Restoration Area

Recorded probe peat depth (m)

- Phase 1
- Phase 2

Interpolated peat depth (m)

- 0 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0

Rev	Description	By	CB	Date



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Client 

Project Breackerie Wind Farm

Title Habitat Management Plan
Peatland Restoration Areas (2024)

Status	Drawn By	PM/Checked By
Issue	MP	SL
Project Number	Scale @ A3	Date Created
ECO21624	1:15,000	OCT 2024
Figure Number		Rev
7		-

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