BOWLTS

FIELD RIGIFA LTD

RIGIFA BATTERY STORAGE PROJECT

TREE MANAGEMENT REPORT

SEPTEMBER 2024

RICS

RIGIFA 200MW BATTERY ENERGY STORAGE SYSTEM (BESS) TREE MANAGEMENT REPORT 31st JULY 2024 (LAST UPDATED 19th SEPTEMBER 2024)

Contents **Page**

Appendices

RIGIFA 200MW BATTERY ENERGY STORAGE SYSTEM (BESS) TREE MANAGEMENT REPORT 31st JULY 2024 (LAST UPDATED 19th SEPTEMBER 2024)

1. INTRODUCTION

The Proposed Development comprises a grid-connected battery energy storage system (BESS) with a capacity of 200 MW. The project will import and export energy to and from the transmission network via the nearby planned Gills Bay sub-station. The Proposed Development will include battery storage units, transformers, access tracks, an underground grid connection cable, fencing and other associated infrastructure.

The majority of the site is located on a mixed farm estate close by the settlement of Rigifa, near to Thurso. The farm comprises mixed grazing, arable and woodland.

This survey has been undertaken by Dr Ben Lennon of Bowlts Chartered Surveyors on behalf of Field Rigifa Ltd.

Bowlts Chartered Surveyors have been instructed to inspect the significant trees that could be affected by proposed development and to prepare the following information to support the planning application:-

- a schedule of the relevant trees to include basic data and a condition assessment;
- an appraisal of the impact of the proposal on trees;
- a preliminary arboricultural method statement setting out standard protective measures and management for trees to be retained.

This report provides an analysis of the impact of the Proposed Development on trees and local amenity with additional guidance on appropriate management and protective measures. Its primary purpose is for the planning authority to review the tree information and consider its relative merits against the planning application.

The survey and resulting report have been produced in accordance with the best practice guidelines set out in BS 5837 (2012) Trees In Relation To Construction Sites: Recommendations.

2./

2. SITE DESCRIPTION

2.1 Location

The survey site is located on a mixed farm estate close by the settlement of Rigifa, near to Thurso.

Centroid Grid ref: ND 293 713
Post code: KW14 8XH
What 3 Words: ///sounds.serves.undivided

2.2 Description

The Proposed Development principally comprises a battery energy storage system (BESS) with a capacity of up to 200 megawatts (MW) which will charge and discharge electricity from the adjacent planned and consented Gills Bay substation. It includes:-

- battery storage units arranged into rows;
- medium-voltage (MV) skids and ancillary low-voltage (LV) equipment;
- high-voltage (HV) grid transformers;
- air insulated switchgear;
- a substation building comprising welfare facilities, a switch room and control room;
- an interface substation and underground 132 kV grid connection cable;
- site-wide supporting infrastructure including cabling, access tracks, fencing, attenuation basins, and landscaping measures.

Whilst the exact specifications are subject to detailed design, the principal components described form the basis of the planning application to allow environmental assessments and mitigation to be appropriately scoped.

The majority of the site is located on a mixed farm estate close by the settlement of Rigifa. The farm comprises mixed grazing, arable, and woodland. The woodlands are exclusively Sitka spruce plantations seemingly planted as shelterbelts over the last 20 to 30 years. They are slow grown and typical of the higher latitudes of the UK mainland. There are few individual trees in the area and none have been identified within the scope of the survey. There are a number of hedgerows in close proximity to the development and while these lie outside the strict scope of the survey, have been included for the sake of completeness.

2.3 Site Constraints

The development area is not constrained by any statutory designations. On a record search, no statutory designations were noted.

3./

3. SURVEY METHODOLOGY

The site survey was undertaken on 13th December 2023 using information supplied by the client. In order to assess the impact of the proposed development, information was collected against the criteria below.

Once the trees were positioned, the tree data required in the BS5837:2012 process was collected for each tree:-

Tree no.	As per plan
Species	Common name/Botanical Name
Height	Metres
Diameter at 1 .5m from	cm
Crown spread (north)	Metres
Crown spread (east)	Metres
Crown spread (south)	Metres
Crown spread (west)	Metres
Age class	Young/Semi mature/Mature/Over mature/Veteran
Physical condition	Grading of physical condition assessment of roots through to foliage
Structural condition	Grading of structure, identifying potential weaknesses
Preliminary	Arboricultural recommendations
Category	A = High, B = Medium, C = Low, U = Unsuitable
Criteria	1 = Arboricultural value, 2 = Landscape value, 3 = Cultural/conservation value
Comments	Additional relevant information

Once the tree survey was completed in the field, the data was verified and downloaded into Arc Map. Analysis was undertaken to identify which trees were affected by the proposed development.

The entire area within the Red Line Boundary (RBL) was surveyed and considered, as shown on the plan at Appendix II.

4. SURVEY RESULTS

The site was surveyed in relation to the Proposed Development. Trees and woods were divided into categories depending on their level of cultural, landscape and ecological importance with A regarded as the most important and C as the least important (U as unsuitable). Definitions may be found in Appendix I. In this case there were no individual trees, but hedgerows were noted for the sake of completeness.

Full and detailed tree survey data can be found in Appendix I.

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5. ARBORICULTURAL IMPACT ASSESSMENT

The impacts on trees can be considered in several discrete sections:-

- access track;
- exclusivity areas and cable routes.

5.1 Access Track

The current access track seems to be well constructed with a sufficiently wide footprint to allow for construction traffic. There is an operational requirement to construct passing places along this access track. There is a total of seven passing places requiring the removal of 18m of hedgerow each. This will result in the total loss of 126m of hedgerow. This is outwith the scope of this report but it is understood that the compensation for this loss is addressed in the Landscaping Plans and Environmental Impact Assessment. There is a hedgerow on the northern side of the track (H2) and to the south on the eastern side of the track (H1). There is a gap between W1 and H1 which might be used to construct a passing place without compromising W1 or H1, should this be required.

5.2 BESS Compound, Transformer Compound and Cable Route

The main compounds of the site are located to the south of the site. There would be no impact on W2 (a young spruce plantation 20 to 30 years of age), as access tracks, cable routes and site compounds are sufficiently set back from this area. A Root Protection Area extending to 2m from the stems of the trees should be sufficient for protective purposes and this will allow sufficient room for any engineering works within the defined area.

There is potential for the underground cable to pass through the hedgerows each side of the track and impact on hedgerows H3 and H4. While outside the strict parameters of this survey, this is noted for the sake of completeness. The hedgerows are fairly recent in origin (planted in the last 20 years) and comprise of common hedgerow species such as hawthorn, blackthorn and *Rosacea spp.* Specifically this is covered in the landscaping and environmental elements of the application.

Table/

Table 1 - Summary of Trees Affected by the Development

	Category A	Category B	Category C	Category U
Trees to be removed	0	0	0	0
Trees to be retained	0	0	0	0
Woodlands/ groups unaffected	0	0	2	0
Woodlands/ groups affected	0	0	0	0

6. PRELIMINARY ARBORICULTURAL METHOD STATEMENT

This section sets out management and protection details that must be implemented to secure successful tree retention.

It is possible that some of the trees along the access road may need to be cut back to facilitate construction traffic access. If this is the case, they may be cut back by 1-1.5m to facilitate access. If this is carried out, the cuts should be carried out cleanly with a sharp tool, not with a flail.

6.1 Mitigation

No mitigation is required for trees and woods on this occasion. Mitigation/compensation for hedgerow removal should be considered and agreed on a like for like basis or enhancements specified. This is included in the Landscaping and Environmental Impact Plans. Given that there will be no impact on trees and there will be no loss, a Compensatory Planting Plan should not be required on this occasion.

6.2 Construction of Protective Fencing

No protective fencing for trees is deemed necessary on this occasion. However, some protective measure will be required for the hedgerows on the site. This does not include the access road which should not require fencing and removals have already been identified.

The/

The netting should be at least 1,000mm in height, high visibility, securely fastened and upright.

The use of any alternative method of fencing should only be allowed following prior approval from the site Arboricultural Consultant or the Local Planning Authority.

The fencing will remain in place until completion of the development and then only removed with the consent of the local planning authority to permit completion of the scheme.

Otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabiliser struts should be mounted on a block tray.

6.3 Construction Exclusion Zones (CEZ)

Based on the evidence provided, it is considered that this project is likely to have little or no impact on the trees and woodlands surveyed. As a general precaution, Root Protection Areas and equivalent Construction Exclusion Zones (CEZs) are proposed for the two woodlands (W1 and W2). However, given their proximity to construction works these are not considered to require fencing.

No works access should be allowed into the CEZs during the development phase. No storage of any building materials or any other materials should be allowed within the CEZs.

In addition, the following should be addressed or avoided:-

- material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 5m of any tree stem;
- fires should not be lit in a position where their flames can extend to within 5m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction;
- notice boards, telephone cables or other services should not be attached to any part of the trees.

It is essential that allowance should be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.

6.4 Special Construction Techniques

No special construction techniques are proposed for this operation.

6.5/

6.5 Installation of Underground Utilities

None of these affect the surveyed trees other than those mentioned above.

6.6 Ground Protection During Works Within CEZs

Not applicable.

6.7 New Surfacing Within Root Protection Areas

No new surfacing is proposed during this operation.

6.8 Backfilling (if applicable)

Not applicable.

7. ARBORICULTURAL SUPERVISION

During the construction phase, it is recommended that an appropriately qualified arboricultural consultant should be appointed to oversee and record works on site to ensure compliance with the Tree Protection Plan. This would likely constitute an initial visit once the site has been laid out and protective fencing in place, and at least once more during the construction phase.

Any deviation from the agreed prescribed method statement or the occurrence of any unforeseen damage to the trees must be immediately reported to the Arboricultural Consultant for the site. All works around the affected area on site must be halted immediately. The Arboricultural Consultant will make a site visit to assess the extent of the damage or deviation from the prescribed method statement and any resulting works required.

Plan prepared by Dr B Lennon FIC For., MRICS, M.A.
Date: 19th September 2024

BL/NH 4100d
19th September 2024

APPENDIX I

SCHEDULE OF TREES

TREE SURVEY RESULTS

SITE: Rigifa
CLIENT Field Engergy Ltd
DATE OF SURVEY: 13/12/2023

No.	Name	Botanical Name	Dia (cm)	TREE HEIGHT (m)	COMMENT	Crown spread				Category	AGE	STEM No.2	DIA STEM No.3	CONDITION	RECOMMENDATION	RPZ Dia (m)
						N	S	E	W							
Woodlands/ Hedgerows																
No.	**NVC/ Woodland type**	**Status (ASNW/LEPO, etc)**	**Approx. Area (Ha) or Length (m)**	**Av. Ht (m)**	**COMMENT**					**Category**	**AGE**	**CONDITION**			**RECOMMENDATION**	**RPZ radius (m) from edfge**
W1	CONIFEROUS	Recent	1.4 Ha	10	Young SS plantation. 20-30 years old. Unthinned					C	25	Good			Retain	2
W2	CONIFEROUS	Recent	1.6 Ha	10	Young SS plantation. 20-30 years old. Unthinned					C	25	Good			Retain	2
H1	Hedgerow	Recent	400m	2	Young hedgerow					B	20	Good			Retain	2
H2	Hedgerow	Recent	1200m	2	Young hedgerow					B	20	Good			Retain	2
H3	Hedgerow	Recent	600m	2	Young hedgerow					B	20	Good			Potential to be partially affected	2
H4	Hedgerow	Recent	730m	2	Young hedgerow					B	20	Good			Potential to be partially affected	2
H5	Hedgerow	Recent	350m	2	Young hedgerow					B	20	Good			Retain	2

DIA:	Tree diameter in Cm at 1.5m from ground level
TOP HEIGHT:	Height estimated using a Suunto clinometer and rounded to the nearest metre
CROWN SPREAD	Measured (to bark at 1.5m) to the four compass points indicated
CATEGORY:	Retention category see below:
	A - Trees of high quality and value in such condition as to be able to make a substantial contribution for a minimum of 40 years
	B - Trees where retention is desirable - moderate category
	C - Trees of low quality and value currently in adequate condition to remain until new planting could be established and expected to remain for a minimum of 10 years
	U - Trees in such condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management
	1 - Mainly arboricultural qualities
	2 - Mainly landscape qualities
	3 - Mainly cultural values, including conservation
ASSESSMENT	Tree removal or retention decision following condition survey. Tree removal in red indicates tree to be removed due to both silvicultural qualities and proposed development
AGE:	Age class of each tree: OM- Over mature M- Mature, MA- Middle aged, SM - Semi mature, Y - Young
STEM NO:	Number of stems
RPZ Dia (m)	Root Protection Zone expresses as concentric circle in radius (in metres). Based on x12 of stem diameter.

APPENDIX II

TREE CONSTRAINTS PLAN

H2
W1
H1
H4
H3
w2
H5

Legend

PLANNING BOUNDARY

SURVEYED WOODS

Category

A

B

C

U

SURVEYED HEDGES

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Client:
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Title:
MAP 1
TREE CONSTRAINTS PLAN

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APPENDIX III

TREE PROTECTION PLAN

Rigifa

Bruach House

Kittiwake Cottage

Philips Mains

Hill of Rigifa'

80

W1

H2

H1

H4

H3

H5

W2

Removal of 7x 18m sections of hedgerow to accomodate passing places along the access track from the east.
Passing places located every 200m.

Removal of 5m of hedge to facilitate the cable route

N

Legend

- PLANNING BOUNDARY
- BESS FOOTPRINT
- ACCESS ROAD
- SSE SUBSTATION
- CABLE ROUTE
- PROTECTIVE FENCING
- HEDGES

0 250 500 Meters

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Client:
FIELD ENERGY LTD
RIGIFA BATTERY ENERGY STORAGE SYSTEM

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Title:
MAP 2
TREE PROTECTION PLAN

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