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Biodiversity Net Gain Report: Rothienorman 500MW BESS Site, Inverurie.



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CLIENT

Blackford Renewables Ltd

Control Sheet

General Report Information	
Report title	Biodiversity Net Gain Report
Client	Blackford Renewables Ltd
Location	Rothienorman 500MW BESS Site, Inverurie
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A Introduction

A.1 Background to activity/development

Black Hill Ecology Ltd was commissioned by Blackford Renewables Ltd to carry out a Biodiversity Net Gain (BNG) appraisal at the Rothienorman 500MW BESS Site, Inverurie. The appraisal is to inform an application for a proposed Battery Energy Storage System (BESS) development and associated works to the east of the Rothienorman Electricity Substation, Inverurie. This report describes the works undertaken during the assessment of potential BNG of the development at the described site.

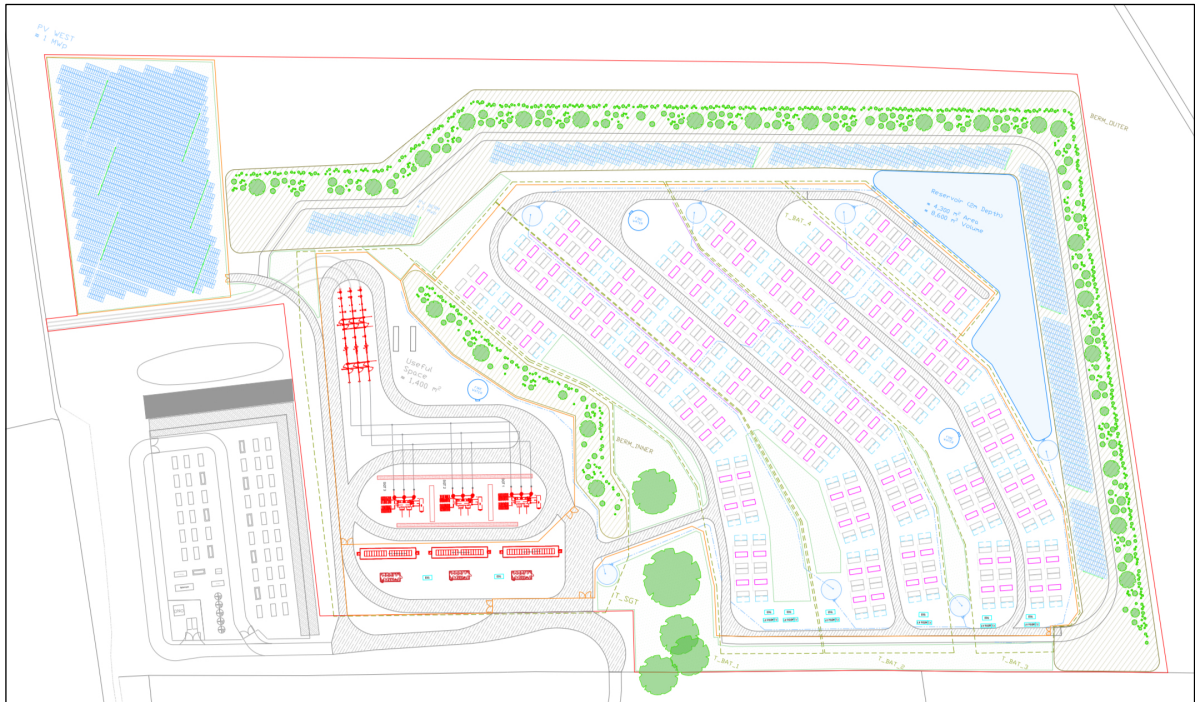


Figure 1. Proposed main site plan excluding access section - original courtesy of Blackford Renewables Ltd.

A.2 Objective - aims

The objective of the appraisal was to assess the baseline ecological value against the ecological value of the application site post development to provide a summary of potential habitat enhancement and creation proposals with measured results to inform on likely magnitude of Biodiversity Net Gain.

A.3 Site description

The area surveyed is part of an arable field network and access located to the east of the Rothienorman Electricity Substation, roughly 2.5 to 3km west of Rothienorman, including the RLB, in all figures, centred around NJ 693356 and adjacent natural environment associated where habitats are contiguous. The site is composed of mostly arable farmland and field margins with adjacent broadleaved treeline and woodland interest (Figure 1-4). The site borders follow some existing field boundaries, previously consented BESS Site, existing and proposed access.

B Site assessment methodology

B.1 Biodiversity Net Gain

B.1.1 Biodiversity Net Gain (BNG) requirement

Biodiversity Net Gain in development is defined as "development that leaves biodiversity in a better state than before" Baker et al (2019). The requirement for developments to seek to achieve BNG arises from

Scotlands Spatial Strategy - National Planning Framework 4 (NPF4, 2023), where Policy 3 details that all development should result in biodiversity being demonstrably better than before and this should be informed by best practice assessment methods.

B.1.2 Biodiversity Net Gain (BNG) evaluation

BNG evaluation and assessment followed current guidance (CIEEM et. al. 2016, CIEEM 2021) with an accepted method of assessing BNG through the use of biodiversity metric calculators to assess the biodiversity value of habitats pre- and post-development based on habitat type, distinctiveness and condition. A biodiversity index is derived for the baseline and for the proposed development, and BNG is considered to be achieved where an increase in value is delivered (on or offsite), and where habitats of a higher value are not replaced exclusively with habitats of a lower value. This assessment was undertaken using the downloadable Defra Biodiversity Metric calculator which requires a minimum of 10% lift in biodiversity value.

B.2 Habitat Assessment Methodology

B.2.1 Baseline Habitat Assessment

A Phase 1 habitat survey using the standard methodology as described in Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey (2010) was undertaken for the site and this was used to assess ecological value of the site and residual impact of the proposed development as presented in the ecology report (Black Hill Ecology Ltd, 2024). A further habitat survey using the UK Habitat Classification system (Butcher et al., 2020) was undertaken to inform the baseline biodiversity value assessment of the site. The UK Habitat Classification survey map used to assess the baseline is provided in Figure 2.



Figure 2. Baseline UK Habitat Classification Survey Map.

B.2.2 Proposed Habitat Assessment

A post development landscape proposal plan showing details of the compensatory plantings to mitigate the impacts of the proposed site plan is provided in Figure 3. The proposed landscape plan was then used to populate a plan demarcating proposed UK Habitat Classification areas which was used for the BNG

assessment based on the landscaping proposals where areas within the RLB are used for biodiversity enhancement and is provided in Figure 4. Base grass habitats were used where indicated.



Figure 3. Post development Landscape Proposal Plan.



Figure 4. Proposed Landscape Plan UK Habitat Classification Map.

Table 1. Baseline assessment of biodiversity unit value and assessment of on-site Habitat Creation and on-site Hedgerow Creation biodiversity unit value.

On-Site Habitat Baseline												
Habitat Type	Area (Ha)	Distinct	Condition		Strategic significance			Total habitat units	Area retained (Ha)	Baseline units retained	Area habitat lost (Ha)	Units lost
Other neutral grassland	0.45	Medium	4	Moderate	2	Medium	1.1	4.00	0	0	0.45	4.00
Cereal crops	15.68	Low	2	N/A	1	Low	1	31.36	0	0	15.68	31.36
Rural tree (4 large, 2 v. large)	0.30	Medium	4	Moderate	2	Medium	1.1	2.64	0.30	2.64	0	0
Rural tree (2 large, 3 v. large)	0.30	Medium	4	Good	3	Medium	1.1	3.99	0.30	3.99	0	0
Total habitat area	16.74							41.99	0.60	6.63	16.13	35.36
(Excluding area of individual trees)	16.13											
On-Site Habitat Creation												
Proposed Habitat	Area (Ha)	Distinct	Condition		Strategic significance			Temporal multiplier		Difficulty of creation		Units delivered
Developed land; sealed surface	6.17	V.Low	0	N/A - Other	0	Low	1	0	1.00	Low	1	0.00
Other neutral grassland	4.96	Medium	4	Moderate	2	Medium	1.1	5	0.84	Low	1	37
Modified grassland	1.80	Low	2	Moderate	2	Low	1	4	0.87	Low	1	6.25
Other woodland; broadleaved	2.91	Medium	4	Moderate	2	Medium	1.1	15	0.59	Low	1	15.02
Sustainable drainage system	0.29	Low	2	Moderate	2	Medium	1.1	3	0.90	Medium	0.67	0.78
Total	16.13											58.58
On-Site Hedgerow Creation												
Proposed Habitat	Length (km)	Distinct	Condition		Strategic significance			Temporal multiplier		Difficulty of creation		Units delivered
Species-rich native hedgerow	0.79	Medium	4	Moderate	2	Medium	1.1	5	0.84	Low	1	5.79
Species-rich native hedgerow	0.47	High	6	Moderate	2	Medium	1.1	10	0.70	Low	1	4.33
Total	1.25											10.11

B.3 Results

B.3.1 Biodiversity Net Gain Appraisal

The baseline for assessment of BNG used the UK-Hab habitat map for the site and is detailed in Figure 2. On Site Habitats - Current Planting Strategy for the proposed development site are taken from the proposed site plan provided by the client as detailed in Figure 3. Numbers in the tables in this section are copied from those generated by the DEFRA Metric Calculation Tool. Note that the spreadsheet rounds figures of credits to 2 decimal places which occasionally generates apparent minor discrepancies due to rounding errors when numbers are placed into tables. The extent, distinctiveness and condition of the baseline habitats on site are summarised in Table 1. Areas of enhanced and new habitats proposed for the Site post-development and the biodiversity value as derived from the DEFRA Metric Calculation Tool the output of which is summarised in Table 2 and shown in Figure 5. The assessment estimates the baseline value of the site at 41.99 units, of which 35.36 units are lost and 6.63 units are retained. Habitat creation proposed for the site provides 58.58 units and hedgerow creation proposed for the site provides 10.11 units. Post-development habitat units on site are therefore $6.63 + 58.58 = 65.21$ units. This is a net change of 23.22 habitat biodiversity units, which is a gain of 55.31%. The Defra metric indicates that the trading rules for BNG are satisfied.

Post development hedgerow units on site are therefore $0 + 10.11 = 10.11$ units. As there are no hedgerow units currently on site and the baseline value is 0 units a net change is non applicable for this intervention under the Defra metric trading rules.

No off-site interventions are proposed.

Table 2. Biodiversity Net Gain Summary of Headline Results of appraisal of baseline biodiversity units net change for on-site proposed post intervention planting Strategy.

Headline Results		
On-site baseline		
Habitat units	41.99	
Hedgerow units	0	
Watercourse units	0	
On-site post-intervention (Including habitat retention, creation & enhancement)		
Habitat units	65.21	
Hedgerow units	10.11	
Watercourse units	0	
On-site net change (units & percentage)		
Habitat units	23.22	55.31%
Hedgerow units	10.11	NA
Watercourse units	0	0%

Figure 5. Snapshot of output from DEFRA Metric Calculation Tool headline results for Rothienorman 500MW BESS Site.

Rothienorman 500		Return to results menu	
Headline Results			
Scroll down for final results ⚠			
On-site baseline	Habitat units	41.99	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	65.21	
	Hedgerow units	10.11	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	23.22	55.31%
	Hedgerow units	10.11	N/A
	Watercourse units	0.00	0.00%
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	23.22	
	Hedgerow units	10.11	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	55.31%	0 baseline units - % cannot be calculated
	Hedgerow units	N/A	
	Watercourse units	0.00%	
Trading rules satisfied?		Yes ✓	

0 baseline units - % cannot be calculated

C Conclusions

C.1 Conclusions

The site is located in a rural area. Habitats and features with measurable biodiversity value were found on site. Arable land of low nature conservation interest will be heavily impacted. A detailed landscape plan was provided for the Biodiversity Net Gain appraisal. The results of the BNG assessment indicate the post intervention planting strategy will result in a Biodiversity Net Gain of over 55% and is considered sufficient to satisfy trading rules by the DEFRA Metric Calculation Tool.

This appraisal demonstrates there is sufficient capacity in the remaining ground within the Red Line Boundary (RLB) post development to carry out the post intervention planting strategy and provide the indicated Biodiversity Net Gain which satisfies DEFRA trading rules.

D References

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