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Carpenters Solar Farm: Biodiversity Net Gain Calculations Report

Prepared for:

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Acknowledgement

This report has been prepared for the sole and exclusive use of Centrica Business Solutions UK LTD (Centrica) in accordance with the scope of work presented in Mabbett & Associates Ltd (Mabbett) Letter Agreement (312543/ASL/SB Rev 3.0), dated 07 March 2025. This report is based on information and data collected by Mabbett. Should any of the information be incorrect, incomplete, or subject to change, Mabbett may wish to revise the report accordingly.

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Section 1.0: Introduction

1.1 Overview

Mabbett & Associates Ltd (Mabbett) was commissioned by Centrica Business Solutions UK Ltd (Centrica) to conduct an Ecological Appraisal and Biodiversity Net Gain (BNG) assessment on the site known as Carpenters, and hereafter referred to as ‘the Site’.

This report has been prepared by Mabbett Senior Ecological Consultant Douglas Kilpatrick MSc MA BSc (Hons).

1.2 Site Location

The Site is located at Dinting Lodge Industrial Estate, Glossop, Derbyshire, SK13 6LE, UK, centred on centred on Ordnance Survey (OS) Grid Reference: SK 01752 94839.

The Site is defined as the area included within the red line boundary shown in Figure 1.

1.3 Site Description

The total area of the site is approximately 2.408 ha and consists of developed land, neutral grassland and a strip of bramble scrub (Figure 2). Habitats within the wider landscape outside the site boundary comprise of similar grassland habitats, scrub and woodland recreationally used by the public. Dinting Lodge Grassland Local Wildlife Site (LWS) to the east partly overlaps the site (Figure 5).

The Site comprised the following elements:

Table 1: Habitats recorded on site.

Habitat	UKHab code
Developed land; sealed surface, Road	u1b6, 800
<i>Holcus – Juncus</i> neutral grassland, Rushes Dominant	g3c8, 15
<i>Deschampsia</i> neutral grassland; Scattered rushes	g3c7, 14
Other neutral grassland; Scattered rushes	g3c, 14
Bramble scrub	h3h

Figure 2 shows a small area of woodland; however, the woodland is located outside of the permitter fence and this area was initially mapped to show the proximity of woodland. The woodland is located outside of the red line boundary, it will be unaffected the development, and therefore it is not included within this assessment.

1.4 Development Proposals

The current proposals comprise of the construction of a solar photovoltaic (PV) array and associated infrastructure.

1.5 Scope of the Report

This report sets out the methodology used and the results of the BNG assessment which follow the DEFRA Statutory Biodiversity Metric (DEFRA, 2023).

The current Illustrative Landscape Masterplan has been used to model the development, with the target of creating an overall BNG across the Site of at least 10 %, in line with the Environment Act (2021) and to adhere to Policy EQ 5 in the High Peak Local Development Plan (High Peak Borough Council, 2016) which specifies:

“...the Council will not permit any development or proposal which would directly or indirectly result in significant harm to geological and biodiversity conservation interests unless it can be demonstrated that... appropriate conservation and mitigation measures are provided, such mitigation measures should ensure as a minimum not net loss and wherever possible, net gain for biodiversity”.

Section 2.0: Methodology

2.1 Field Survey and Condition Assessment

The Botanical Survey was undertaken on the 13th of June 2024 by Mabbett Senior Ecologist Douglas Kilpatrick MSc MA BSc (Hons). Habitat types were recorded during the botanical survey using the UK Habitat Classification Methodology and habitat condition was assessed using the classification criteria outlined in the Statutory Biodiversity Metric Technical Supplement (DEFRA, 2023). The results of the Ecological Appraisal and the Botanical Survey are reported in the accompanied documents (Mabbett, 2023; Mabbett 2024) and habitat recorded are presented in Figure 2.

2.2 Biodiversity Net Gain Calculations

Following the survey, this data was entered into QGIS and the total area in hectares (ha) of UKHab habitats was measured. The area that would be occupied by the proposed development was also measured. The Statutory Biodiversity Metric (DEFRA, 2023) was used to assess measurable biodiversity loss or gain for the Site. The post development biodiversity unit score was calculated based on the areas of each habitat to be retained and/or enhanced in QGIS. The total area of the proposed development infrastructure was subtracted from each habitat in turn and input into the biodiversity calculator to determine the percentage change in habitat (loss or gain).

The total area of the Site is 2.408 ha, which is considered a major development under the current Statutory Metric guidance, and therefore the Statutory Biodiversity Metric was used rather than the Small Sites Metric.

The Illustrative Landscape Masterplan (Figure 4) was used to calculate the areas for the BNG. A total of seven post-development habitats were calculated, six of which were included in the previous design iterations. Only the final iteration is included within this report.

For all proposed post-developments habitats, a BNG calculation was undertaken, which takes into consideration the baseline biodiversity units (BU) value, the effects of the proposed development on the habitats present along with quantifying the proposed mitigation, enhancement, and habitat creation post development. The calculations are conducted in three steps:

1. Baseline habitat data from the preliminary ecological assessment was put into the metric by selecting the most suitable habitat types identified from the field survey. To determine BU value of the site, the data included polygon-based habitats such as fields and water bodies, and linear habitats such as hedgerows. This also includes the condition assessment of each of the habitats;
2. The projected habitat enhancements are included. This is based on areas of retained habitats which have enhancement potential based on the accompanying condition assessment; and
3. The proposed habitat creation was included in the metric and are compared to the baseline minus the habitat loss, which produces the overall BNG, or loss.

2.3 Assumptions and Limitations

The BNG calculations have been based on the Illustrative Landscape Masterplan provided by Mabbett. Should the plan be altered in the future, or areas used in this strategy become unavailable, then the results of the calculations would no longer be valid.

The masterplan was superimposed onto a site map on QGIS and the area of each habitat area calculated. Therefore, it is possible that each habitat area may be slightly different to their actual proposed size due to the quality and accuracy of aerial imagery. However, it is considered that any error would be small enough to not affect the BNG calculations to a significant degree.

The condition assessment focused solely on the habitats within the site boundary. Dinting Lodge Grassland LWS, located outside this boundary, was not surveyed. As a result, the condition assessments for that area were estimated since the optimal season for grassland botanical surveys had concluded.

Section 3.0: Results

3.1 Baseline Habitat Conditions

3.1.1 On-site Baseline

Baseline habitat conditions for the 2.408 ha proposed development are summarised in Table 2. A total of six habitat types were present within the Site boundary. Some areas of the site lie within the Dinting Lodge Grassland LWS and have a strategic significance multiplier applied of 1.15. The remainder of the habitats are adjacent to the LWS but in close proximity and are therefore considered a desirable location, with a strategic significance multiplier of 1.1 applied.

Table 2: Habitat areas, condition assessments and ecological baseline units.

Habitat type	UKHab Code	Area (ha)	Condition	Strategic Significance	Required action to meet trading rules	Ecological Baseline Total Habitat Units (HU)
Developed land; sealed surface, Road	u1b6, 800	0.595	N/A	Location desirable but not in local strategy	Compensation Not Required	0.00
<i>Holcus</i> – <i>Juncus</i> neutral grassland; Rushes dominant	g3c8, 15	0.458	Poor	Location desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	2.02
<i>Holcus</i> – <i>Juncus</i> neutral grassland	g3c8	0.059	Moderate	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	0.54
<i>Deschampsia</i> neutral grassland; Scattered rushes	g3c7, 14	0.508	Fairly Poor	Location desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	3.35
Other neutral grassland; Scattered rushes	g3c, 14	0.439	Moderate	Location desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	3.86
Bramble scrub	h3h	0.022	N/A	Location desirable but not in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	0.10
<i>Deschampsia</i> neutral grassland; Scattered rushes	g3c7, 14	0.092	Fairly Poor	Formally identified in local strategy	Same broad habitat or a higher distinctiveness habitat required ($\geq$)	0.63