



Dean Moor Solar Farm

Environmental Statement: Appendix 8.8 – Biodiversity Net Gain (BNG) Report on behalf of FVS Dean Moor Limited

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**DEAN MOOR SOLAR FARM
ENVIRONMENTAL STATEMENT
APPENDIX 8.8 – BIODIVERSITY NET GAIN REPORT
PLANNING INSPECTORATE REFERENCE EN010155
PREPARED ON BEHALF OF FVS DEAN MOOR LIMITED**

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009,
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1. Introduction

1.1 Overview

- 1.1.1 This report presents the results of a preliminary Biodiversity Net Gain ('BNG') assessment which could be achieved for the Dean Moor Solar Farm (the 'Proposed Development'), and forms Appendix 8.8 [REF: 6.3] of Chapter 8 – Biodiversity, of the Environmental Statement ('ES') for the Proposed Development.
- 1.1.2 This assessment has taken a conservative approach when considering the habitats which will be retained, enhanced and/or created on the Site, as well as their location, extent, and final target condition. This will be reviewed as part of the post-consent detailed design and rely on details (such as the final layout) not available at this stage.
- 1.1.3 BNG will be secured through the implementation of the Landscape and Ecological Management Plan ('LEMP'), an outline version of which is available at ES Appendix 7.7. The LEMP will substantially be in accordance with the Outline Landscape and Ecological Management Plan ('OLEMP'), which provides the detail on how the habitats, hedgerows, and watercourses will be managed for the operational phase of the Proposed Development. While this BNG assessment sets out what could be achieved, until the final design is established, the OLEMP has presented target commitments for BNG to allow for flexibility of the final design. Nonetheless, the ambition of the Proposed Development is to exceed these target commitments and aspire to those presented in this BNG Report.
- 1.1.4 This report is supported by figures provided within the ES which have been referenced where appropriate. Additionally, this report presents figures listed below as inserts, but which are also provided at the end of the report.
- Figure 3.1: Pre-development habitats, hedgerows and watercourses recorded on Site in Areas A, B, and D;

- Figure 3.2: Pre-development habitats, hedgerows and watercourses recorded on Site in Area C;
- Figure 3.3: Post-development habitats, hedgerows and watercourses recorded on Site in Areas A, B, and D; and
- Figure 3.4: Post-development habitats, hedgerows and watercourses recorded on Site in Area C.

1.2 Site Location

1.2.1 The Proposed Development will be located on approximately 276.5 hectares ('ha') of land between the villages of Gilgarran and Branthwaite in West Cumbria (the 'Site'), which is situated within the administrative boundary of Cumberland Council (the 'Council'). The Proposed Development will be within the 'Order Limits' (the land shown on the Works Plans) **[REF 2.3]** within which the Proposed Development can be carried out. Note that for the purpose of this BNG Report, the terms 'Order Limits' and 'Site' are used interchangeably.

1.2.2 The Site Location Plan is shown in ES Chapter 1 – Introduction **[REF 6.1]**, Figure 1.1. The Order Limits for the Proposed Development constitute the maximum area of land potentially required for the construction, operation and decommissioning of the Proposed Development and show how the Site is divided into four main areas (Areas A, B, C, and D). These areas are shown in Chapter 3 – Site and Proposed Development Description, ES Figure 3.1 **[REF: 6.1]**.

1.3 Proposed Development

1.3.1 The maximum extent of parameters for the Proposed Development and a description is available from ES Chapter 3 – Site and Proposed Development Description. The preliminary BNG assessment has been assessed against the Landscape Strategy Plan ('LSP') (Figure 7.6.1-7.6.5) **[REF 6.2]** for the Proposed Development, which will inform the Landscape and Ecology Plan ('LEP') and the LEMP.

1.3.2 The Proposed Development comprises the construction, operation, and decommissioning of a solar photovoltaic (PV) energy generating station with a total capacity exceeding 50MW comprising solar PV arrays, grid

connection infrastructure, associated infrastructure, and green infrastructure.

1.3.3 The Proposed Development will include the following key elements of infrastructure:

- Solar PV panels;
- Solar PV array mounting structures;
- Power Conversion System ('PCS') Units in the form of Inverters and Transformers;
- Grid Connection Infrastructure comprising Customer and DNO Substation Buildings and external electrical equipment and ancillary infrastructure within a Security Fence;
- Perimeter Fencing, Gates, CCTV cameras, electrical cabling, and other associated infrastructure;
- Access from the highway and internal access tracks; and
- Green infrastructure including landscape planting and ecological enhancements.

1.3.4 The earliest construction of the Proposed Development could commence is 2026 and for the purposes of the ES assessment, construction would span a period of approximately 18 months.

1.3.5 The construction phase of the Proposed Development will be carried out in accordance with the Outline Construction Environmental Management Plan ('OCEMP') appended to Chapter 5 – Construction and Decommissioning, as Appendix 5.1 [REF: 6.3]. Management of the Site with regards to landscape and ecology, which identifies how habitats will be managed to deliver BNG, will be carried out in accordance with the Outline Landscape and Ecological Management Plan ('OLEMP') (Appendix 7.7) [REF: 6.3].

1.4 Biodiversity Net Gain Background

Legislation

1.4.1 The Environment Act 2021¹ was enacted into law in November 2021. It sets out the Government's objectives to restore natural habitats and increase biodiversity and makes make BNG a mandatory requirement for

¹ HM Government (2021). Environment Act 2021 c. 30.

development in England. Once the relevant provisions come into effect, the Environment Act 2021 will require all development schemes, including NSIPs, to achieve a minimum 10% net gain in biodiversity units relative to a site's baseline biodiversity value.

- 1.4.2 While the mandatory 10% BNG requirement is currently in force for planning consents under the Town and County Planning Act ('TCPA'), Schedule 15 of the Environment Act 2021 exempts NSIPs from delivering BNG. Although it is expected to apply by November 2025; projects accepted prior to this date are not required to deliver BNG.
- 1.4.3 Although not a mandatory requirement, the Applicant intends to deliver BNG and to commit to this delivery via the DCO requirements. The Proposed Development's approach to BNG is set out in this report.
- 1.4.4 The Natural Environmental and Rural Communities ('NERC')² Act 2006 sets a duty on public bodies (including Local Authorities) to conserve biodiversity, which includes restoring or enhancing species populations or habitat.
- 1.4.5 In England, Section 41 (S.41) of the NERC Act requires the SoS for Environment to publish and maintain a list of habitats and species that are of 'principal importance' for the purpose of conserving biodiversity and are regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. The S.41 list includes 56 habitats and almost 1,000 species. The list is used by decision-makers, such as Local Authorities, in implementing their protection duties when carrying out their functions.
- 1.4.6 Since the UN Convention on Biological Diversity in 2010, the UK identifies these habitats and species as conservation priorities under the UK Post-2010 Biodiversity Framework, (they were formerly identified as UK Biodiversity Action Plan ('BAP') habitats and species).

² HM Government (2006). Natural Environment and Rural Communities Act 2006 c. 16.

National Policy

- 1.4.7 Environmental and BNG is covered in Sections 4.6 and 5.4 of the Overarching National Policy Statement ('NPS') for Energy ('EN-1')³, with further guidance in Section 2.10 of NPS for Renewable Energy Infrastructure ('EN-3')⁴ 'Solar Photovoltaic Generation'. Full details of these policies are provided in ES Chapter 8 – Biodiversity [REF: 6.1].
- 1.4.8 The National Planning Policy Framework 2024 ('NPPF')⁵ sets out the Government's planning policies for England and how these are expected to be applied. Underpinning the NPPF is the principal aim of '*sustainable development*' which is to be pursued through the fulfilment of interdependent economic, social and environmental objectives.
- 1.4.9 Chapter 15 of the NPPF details core policy principles with respect to conserving and enhancing the natural environment. Securing net gains for biodiversity, in accordance with the Government's paper '*A Green Future; Our 25 Year Plan to Improve the Environment*'⁶, is a key theme running through the chapter, whereby planning decisions are required to contribute to and enhance the natural environment by '*minimising impacts on and providing net gains for biodiversity*', and plans should '*identify and pursue opportunities for securing measurable net gains for biodiversity*'. Chapter 15 of the NPPF also places planning decisions in the context of the mitigation hierarchy where, if impacts on biodiversity cannot be avoided, mitigated, or as a last resort compensated for, then planning permission should be refused.
- 1.4.10 There are also a number of local policies relating to biodiversity which are detailed in the Allerdale Borough Council Local Plan (2014) (Part 1)⁷ and

³ HM Government (2024). Department for Energy Security & Net Zero (DESNZ). Overarching National Policy Statement for Energy (EN-1).

⁴ HM Government (2024). DESNZ. National Policy Statement for Renewable Energy Infrastructure (EN-3).

⁵ HM Government (2024). Ministry of Housing, Communities & Local Government (MHCLG). National Planning Policy Framework.

⁶ HM Government (2018). A Green Future: Our 25 Year Plan to Improve the Environment.

⁷ Allerdale Borough Council (2014). Allerdale Local Plan (Part 1).

Allerdale Borough Council Local Plan (2020) (Part 2)⁸. Full details of these policies are provided in ES Chapter 8 – Biodiversity.

Biodiversity Metrics

- 1.4.11 Biodiversity is complex and to simplify the quantification, metrics have been developed. BNG metrics use habitat features as a proxy measure for biodiversity. Metrics use a simple calculation that take into account the importance of these habitats' features for nature, using criteria such as their size, distinctiveness, and ecological condition. Metrics enable assessment of the present and forecast future biodiversity value of a site by calculating biodiversity gains and losses.
- 1.4.12 Biodiversity metrics enable developers to better understand and quantify the current biodiversity value of a site, and how proposed changes will impact on that value. Biodiversity metrics enable developers to see how they might be able to design a site in a way that increases its biodiversity value over time, i.e., achieving biodiversity net gain.
- 1.4.13 The use of a biodiversity metric assumes the principles of the mitigation hierarchy have been adopted and used when developing measures to address impacts on biodiversity receptors. The principles of the mitigation hierarchy are that, in order of preference, impacts on biodiversity should be subject to avoidance, mitigation, and compensation.
- 1.4.14 The current approved metric is Defra's 'Statutory' Biodiversity Metric, hereafter referred to as the 'BNG Metric'⁹. Biodiversity is calculated pre and post development and the change in biodiversity units indicates either a net loss, a net gain, or no change in biodiversity.

⁸ Allerdale Borough Council (2020) Allerdale Local Plan (Part 2).

⁹ HM Government (2024). Department for Environment Food & Rural Affairs (DEFRA). The Statutory Biodiversity Metric User Guide (2024) Available at https://assets.publishing.service.gov.uk/media/669e45fba3c2a28abb50d426/The_Statutory_Biodiversity_Metric_-_User_Guide_23.07.24_.pdf Accessed November 2024

1.5 Report Objectives

1.5.1 The objectives of this report are to:

- Outline the approach to BNG delivery for the Proposed Development, following the BNG hierarchy;
- Provide methodologies, assumptions and relevant guidance in undertaking the BNG calculation;
- Provide a description of the relevant baseline, retained, enhanced and created habitats and their existing/ targeted habitat condition, and
- Undertake a calculation of the percentage BNG achieved based on the LSP.

1.6 Report Qualification

1.6.1 The habitat survey data on which the BNG assessment is based was collected during the completion of the Preliminary Ecological Assessment ('PEA') in 2023. The assessment of watercourses, to include streams, ponds and ditches was collected in 2024. Site circumstances, scientific knowledge, or methodology can change during the course of a project, and these external factors may impact on the scope of subsequent work requirements.

1.6.2 All survey work and reporting was undertaken by experienced and qualified ecologists, in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management ('CIEEM')¹⁰.

¹⁰ CIEEM (2022) Code of Professional Conduct. Winchester.

2. Approach to BNG Assessment

2.1 Overview

- 2.1.1 The section below sets out the approach to delivering BNG as part of the Proposed Development and describes the methodology used to calculate a preliminary level (%) of BNG for habitats, hedgerows and watercourses, based on the indicative LSP (Figure 7.6.1-7.6.5). This includes mapping and condition assessment of baseline habitats; identification of retained habitats, and definitions and target conditions for enhanced and created habitats.

2.2 Statutory Biodiversity Metric Key Rules and Principals

- 2.2.1 A summary on how the assessment has abided to the statutory biodiversity's key rules and principals as set out in the User Guide are provided in Appendix A.

2.3 Baseline Habitats

- 2.3.1 Baseline habitats on Site were recorded during a UKHab Survey undertaken on 26 April 2023 by ecologists who are experienced in undertaking ecology surveys of this nature. An additional survey using National Vegetation Classification ('NVC') methodology was undertaken on 09 August 2023 within three areas which had potentially elevated botanical interest and which may be related to geological and/or hydrological conditions. Full survey details are provided at Appendices 8.1 and 8.2 [REF: 6.3]. Surveys of watercourses were carried out on 27 and 28 June 2024 by surveyors trained in 'Modular River Survey – River Condition Assessment' ('MoRPh')¹¹ methodology. No standalone report was provided for this survey, and data was transcribed directly into the BNG metric from condition assessments.
- 2.3.2 Condition assessment scores were determined by reviewing the criteria within each habitat condition sheet in the Biodiversity Metric 4.0 Technical

¹¹ Modular River Survey. MoRPh Rivers (2016-Present).

Annex¹² which was the current published methodology at the time of the survey. The condition assessment sheets in Metric 4 are almost identical to those applicable to the BNG Metric used for this assessment.

2.4 Guidance

2.4.1 The following guidance has been used when undertaking the BNG Metric calculations for the Proposed Development to ensure it delivers a net gain in biodiversity:

- Biodiversity Net Gain. Good practice principles for development: a practical guide¹³;
- UK Habitat Classification Version 2.0¹⁴;
- The Statutory Biodiversity Metric User Guide¹⁵; and
- The Statutory Biodiversity Metric Technical Annex 1.

2.5 Statutory Metric

2.5.1 The BNG Metric tool has been used to undertake the biodiversity metric calculations. This was published by Natural England in 2024, alongside the User Guide and Technical Annex listed above.

2.5.2 The BNG Metric calculates the biodiversity value of each parcel of habitat within a site (measured as biodiversity units). Habitat area is used, except for linear habitats, where length is used (i.e., for hedgerows and watercourses). The value of each habitat type is adjusted to site specific circumstances, taking into account distinctiveness, condition and if the habitat parcel is located in an area identified as being of significance for nature, typically in a Local Nature Recovery Strategy ('LNRS') where this has been published, or alternatively alternative documents for assigning strategic significance such as a Local Plan, Local Biodiversity Action Plan or other appropriate published documents.

¹² The Statutory Biodiversity Metric Technical Annex 1 - Condition Assessment Sheets and Methodology. DEFRA (2024) [Statutory Biodiversity Metric Condition Assessments23.07.24.xlsx \(live.com\)](#) Accessed December 2024

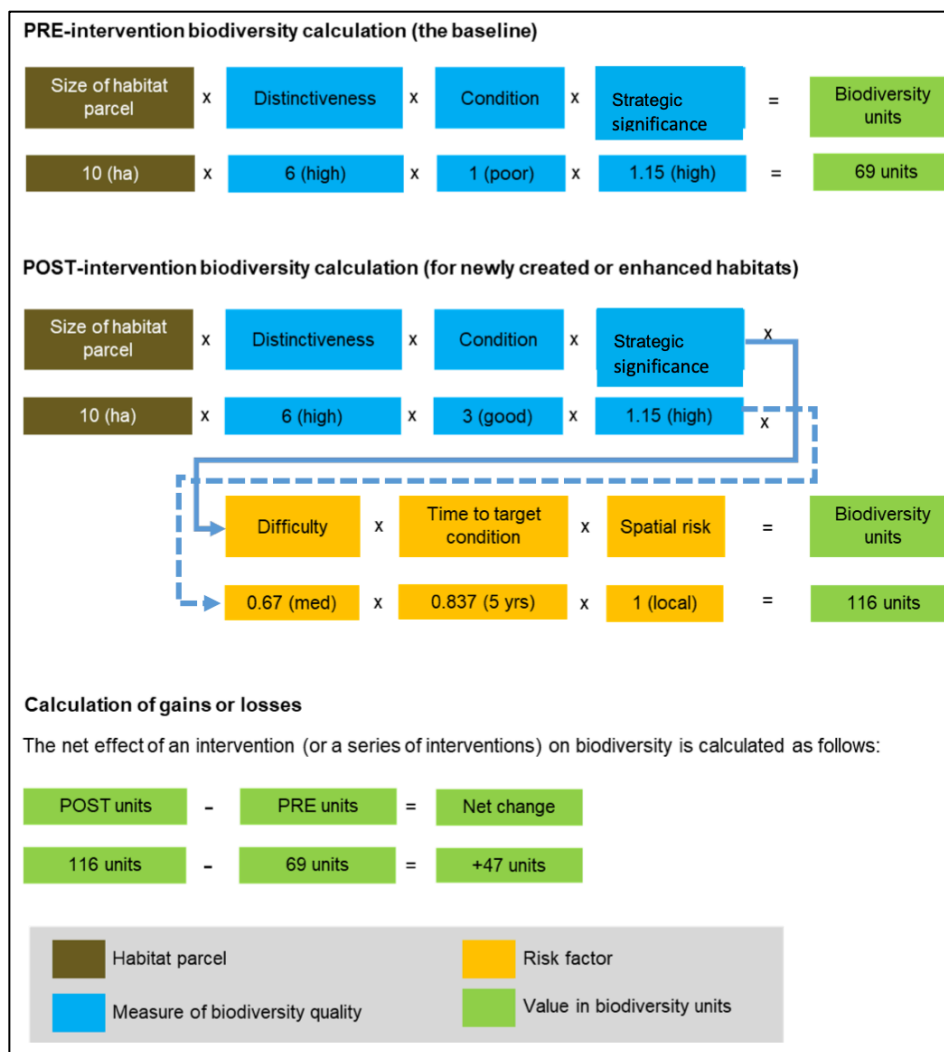
¹³ CIEEM, CIRIA, IEMA (2019) Biodiversity Net Gain. Good practice principles for development: a practical guide¹³. <https://cieem.net/wp-content/uploads/2019/02/C776a-Biodiversity-net-gain.-Good-practice-principles-for-development.-A-practical-guide-web.pdf> Accessed November 2024

¹⁴ UK Habitat Classification (2018-2024) Butcher, B., Edmonds, B., Norton, L. and Treweek J.

¹⁵ HM Government (2024). DEFRA. The Statutory Biodiversity User Guide

- 2.5.3 A score is applied to each component, which when multiplied with the habitat area produces a score which represents the number of biodiversity units associated with each habitat parcel. The sum of these scores across the whole site represents the overall baseline or 'pre-development' value in biodiversity units.
- 2.5.4 The predicted post-intervention (or 'post-development') unit value is calculated in the same way, but with the addition of factors to take into account risks associated with creating, enhancing or restoring habitats.
- 2.5.5 The calculated value of the 'post-development' biodiversity units is then deducted from the calculated value of the 'pre-development' biodiversity units to give a predicted net change biodiversity unit value. The complete calculation is demonstrated in Figure 2.1 which was included in previous versions Biodiversity Net Gain User Guides but which is still relevant.

Figure 2.1 Summary of Biodiversity Net Gain Calculation (taken from The Biodiversity Metric 3.0: User Guide)



2.5.6 Within the BNG Metric User Guide there are a number of rules and key principles which apply to BNG assessments. Of particular relevance to this assessment is Rule 1 ‘*Trading down*’. This rule requires that habitats of a certain distinctiveness present pre-development should be re-created post-development on a ‘*like for like basis*,’ or ‘*better*,’ approach.

2.5.7 Where BNG is not achievable within the desired design on-site, then off-site compensation areas can be used, and the same calculation undertaken. While BNG is not needed for the Proposed Development, the biodiversity assessment has still complied with the BNG rules and principles.

Mitigation Hierarchy

- 2.5.8 The Proposed Development has included embedded mitigation and avoidance measures to reduce impacts on the existing biodiversity on the Site and comply with the mitigation hierarchy. Details are presented in ES Chapter 8 – Biodiversity.

2.6 Assigning Habitat Type and Condition (Baseline)

- 2.6.1 Condition of the habitats present within the Site was assessed during the UKHab survey. Condition scores were determined by reviewing the criteria within each habitat condition sheet in the Biodiversity Metric 4.0 Technical Annex¹⁶. The condition assessment Sheets for each habitat parcel are included in this report as Appendix B.

2.7 Post Development Habitats: delays to habitat creation / enhancement

- 2.7.1 Within the BNG Metric the post-development of habitats can be assigned values indicating: '*Habitat created in advance*' and 'Delay in starting habitat creation', both measured in years.
- 2.7.2 For this assessment, there will be no advance creation of habitat (i.e., '0' years). On commencement of construction, there will be relaxation in grazing across much of the Site such that several habitats, in particular grassland, may begin to transition to a better condition. However, as construction may last up to 18 months, a conservative approach for the BNG Metric has been used with it being considered habitat creation and/or enhancement will not start until all construction is complete at three years.

2.8 Strategic Significance

- 2.8.1 The LNRS for Cumbria¹⁷ and the Statement of Biodiversity Priorities for Cumbria¹⁸ which cover the area in which the Site is located was consulted to determine the strategic significance of habitats identified on-Site.

¹⁶ The Biodiversity Metric 4.0 - Technical Annex 1: Condition Assessment Sheets and Methodology. Available at: <https://publications.naturalengland.org.uk/file/5957496838291456> Accessed December 2024

¹⁷ Cumbria Local Nature Recovery Strategy (2020)

¹⁸ Cumbria County Council (2021). Statement of Biodiversity Priorities: for the Cumbria Local Nature Recovery Strategy Pilot.

2.8.2 The purpose of the LNRS is to enable nature recovery through the creation and restoration of habitats brought about by changes in land management. It is intended that the LNRS will help deliver the nature recovery networks, and other initiatives set out in the Government's 25 Year Environment Plan.

2.8.3 The key habitat types included within the Cumbria LNRS, and which are present on the Site, are presented in Table 2.1 below. Within the BNG Metric, they have all been classed as '*Formally identified in the Local Strategy*'.

Table 2.1: Habitats identified in Cumbria LNRS and classed as Formally Identified in Local Strategy for BNG Metric.

Habitat type	Relevance to LNRS	Relevance
Lowland dry acid grassland:	An uncommon habitat in Cumbria that occurs in areas that may once have been lowland heath. It is only found in small areas on thin dry soils on a variety of rock types in the lowlands.	A small are of this habitat occurs in Area C close to Thief Gill.
Fen, marsh, and swamp	A range of wetland priority habitats that require various water regimes. They are found throughout Cumbria.	Some small areas of fen and swamp exist on Site around pond margins in Area D.
Hedgerows:	Found throughout Cumbria and all hedges are a priority habitat. This recognises their intrinsic biodiversity value and as a movement and feeding corridor for wildlife.	Hedgerows are present in Areas A, B and C of the Site.
Mixed Scrub:	This is not recognised as a priority habitat, but it is important for biodiversity. Throughout Cumbria remnant areas can be found often in the form of old hawthorn trees with little young growth to replace them.	Some small areas of scrub occur Site within Area C of the Site.
Ponds:	Ponds are found throughout the lowland in the county.	Two ponds exist on-Site: one in Area D and a small ephemeral pond in Area C.
River:	The uplands of Cumbria provide water for a large number of river catchments. The rivers are important for wildlife including Atlantic salmon, sea trout, freshwater pearly mussels, eel, otter, and aquatic plants.	Thief Gill is in the upper catchment of the River Marron which flows into the River Derwent – a Special Area of Conservation (SAC).

2.8.4 Although there are several broadleaved or mixed woodlands on-Site, these are of plantation origin, and do not classify as semi-natural

woodland which is included in the LNRS. As such, both types of woodland present on Site have been identified as '*ecologically desirable but not formally in local strategy*', given their value to wildlife. Gorse scrub which is prevalent on Site is also not included in the LNRS definition of '*scrub*' given its ability to grow prolifically in some habitats.

2.9 Assumptions and Limitations

2.9.1 Assumptions and limitations associated with the calculation are listed below:

- Although Metric 4.0 condition assessment sheets were used to inform the BNG Metric, this is not considered to have impacted upon the outcome of the BNG assessment. The change in the condition assessment sheets since July 2024 are generally minor and some of the habitats are absent from Site (i.e. no coastal habitats; no scrub comprises sea-buckthorn). Further, the assessment had already been commenced prior to the date of release of the revised condition assessment sheets and it was not appropriate to transcribe data recorded in the field into revised assessment sheets;
- The post-development habitats are based on the design provided within the LSP (Figure 7.6.1-7.6.5);
- The post-development calculation has assumed a conservative estimate of BNG, noting that some areas within Work No. 1 [REF: 2.3] will not be covered by solar arrays such that a greater habitat condition can be achieved by the management set out in the OLEMP (Appendix 7.7);
- Enhancements to habitats have only considered a single step to the next criteria within the 30-year management period required as part of BNG. Although some habitats may achieve a higher target condition in a shorter period, a conservative approach has been taken;
- It is assumed that the post-development habitats can be managed to reach the target condition included in the calculation after 30 years. While the Proposed Development will extend to 40 years, the target conditions will be achieved by year 30. Ongoing management may achieve greater conditions but for the purposes of this assessment a conservative approach has been taken, and which aligns with BNG methodology;
- For the purposes of the BNG assessment the small area of 'flush' identified during the PEA/ UKHab survey, adjacent to Thief Gill, was included as 'lowland acidic grassland'. Flush does not appear on the UKHab User Guide. This allows a 'medium' distinctiveness and 'moderate' condition to be selected, thereby allowing for a conservative approach to be taken for this assessment;

- The small area of felled woodland identified in the PEA (Appendix 8.1) has been considered as standing woodland: mixed broadleaved in 'good' condition. Again, this is to allow a conservative approach to the assessment to be made and not account for small changes caused by recent land use practices; and
- Although buffers exist between solar infrastructure and landscape features such as hedgerows and watercourses in Work No. 1, the post-development calculations do not account for any greater increase in the condition of the habitat in these buffers, beyond that in adjacent habitats which will already be enhanced. It is likely that these habitats will obtain a higher condition than those under solar arrays, especially if subject to the management set out in the OLEMP. Nonetheless, so that this assessment is conservative, the habitat condition proposed will be the same as in adjacent habitats of the same type.

3. Results

3.1 Overview

- 3.1.1 This section summarises the results of the calculations within the BNG Metric including pre-and post-development habitats.

3.2 Pre-Development

- 3.2.1 No irreplaceable habitats were recorded within the Site. A number of priority habitats which are listed on the LNRS are present.
- 3.2.2 The baseline habitats recorded during the UKHab survey (ES Appendix 8.1) are presented in Figures 3.1 - 3.2 for Areas A, B, C, and D below. The condition assessment sheets for each habitat parcel are included in the report Appendix B. Table 3.1 provides a summary of the baseline habitats, including their distinctiveness, condition assessment, strategic significance, and areas which have been used within the BNG Metric calculation. The units for each habitat type, hedgerow, and watercourse are also provided.

Figure 3.1: Pre-development habitats, hedgerows and watercourses recorded on Site in Areas A, B and D

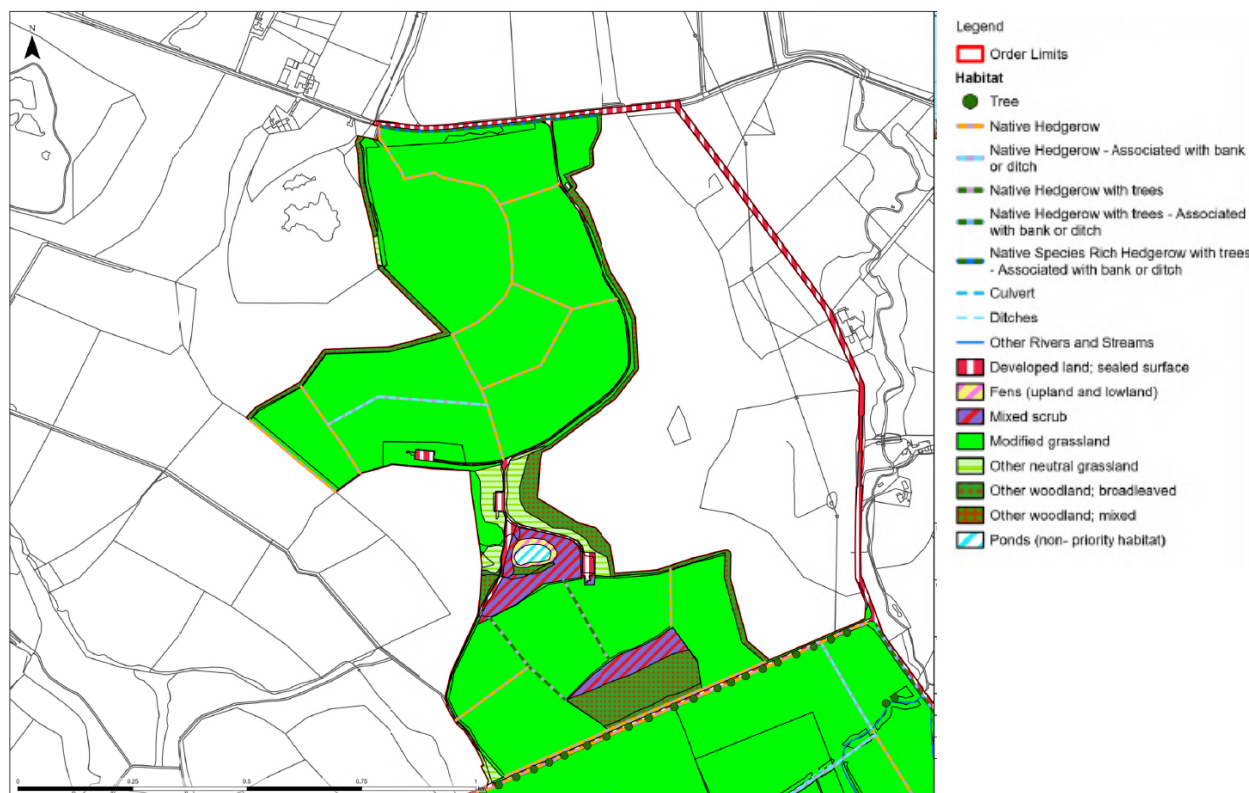


Figure 3.2: Pre-development habitats, hedgerows and watercourses recorded on Site in Area C

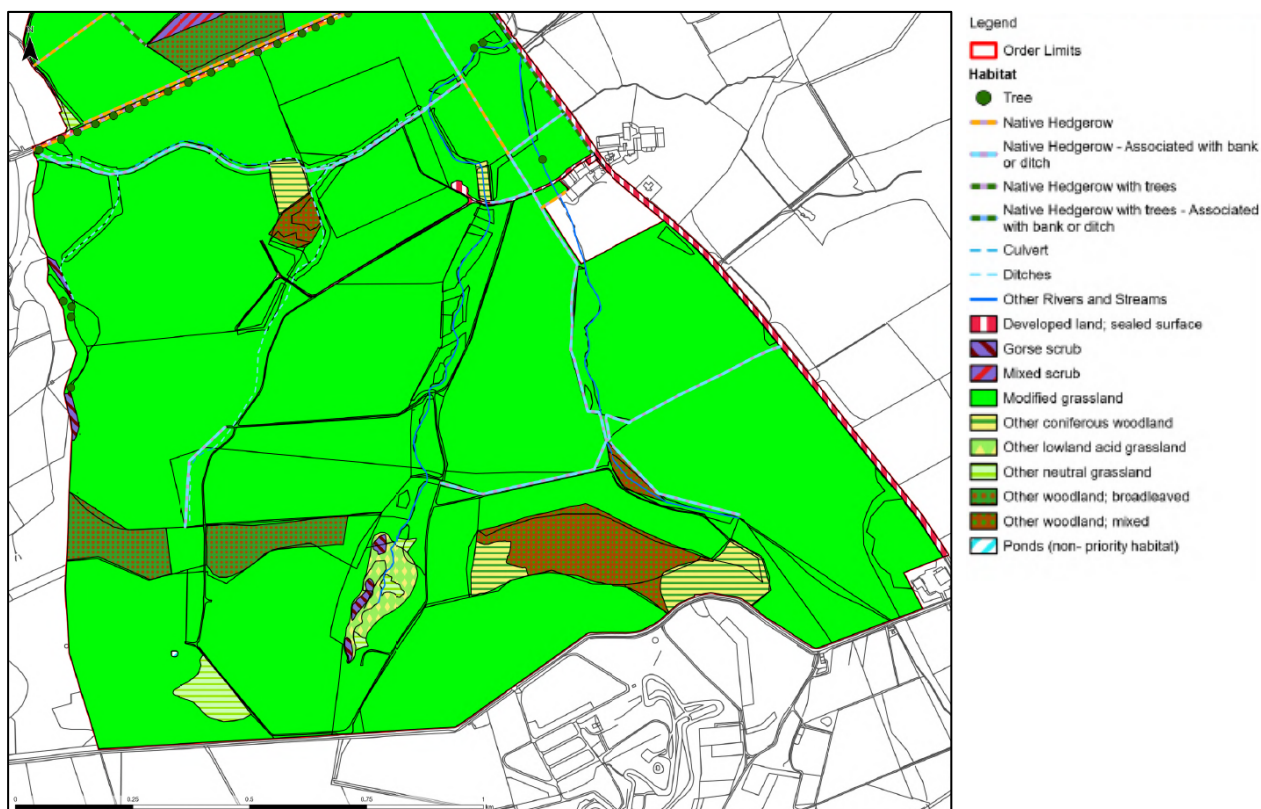


Table 3.1: Summary of baseline recorded on the Site

(Habitat features are measured in hectares while hedgerows and watercourses are measured in km)

Habitat type (UKHab)	Distinctiveness	Condition	Strategic significance	Area (ha) / Length (km)	Habitat units
Modified grassland	Low	Poor	Not in LNRS	241.20	482.40
Other lowland acid grassland	Medium	Moderate	Formally identified in LNRS	1.51	13.93
Other neutral grassland	Medium	Areas of Poor, Moderate, and Good	Not in LNRS	3.39	25.62
Other woodland: broadleaved	Medium	Moderate	Location ecologically desirable but not in LNRS	10.56	92.92
Other woodland: mixed	Medium	Moderate	Location ecologically desirable but not in LNRS	6.32	55.59
Other woodland; coniferous	Low	Moderate	Not in LNRS	3.80	15.20
Mixed scrub	Medium	Moderate	Formally identified in LNRS	2.67	24.59
Gorse scrub	Medium	Moderate	Not in LNRS	0.53	2.13
Swamp and Flush (Fens)	Very high	Moderate	Formally identified in LNRS	0.24	4.34
Ponds (Non priority)	Medium	Moderate	Formally identified in LNRS	0.28	2.59
Developed land; sealed surface	Very Low	N/A	Not in LNRS	6.15	0
Hedgerow	Low, Medium, High, and Very High	Poor, Moderate, and Good	Formally identified in LNRS	9.65km	81.89
Watercourses (culvert)	Low	Poor	Not in LNRS	0.41km	0.56
Watercourses (streams)	High	Moderate	Formally identified in LNRS	2.70km	27.98
Watercourses (ditches)	Medium	Poor	Not in LNRS	1.73km	5.19

3.3 Post-Development Habitats

3.3.1 Post-development habitats, which reflect those provided in the LSP (Figure 7.6.1-7.6.5) are presented in Figures 3.3 and 3.4 for Areas A, B, C and D. Table 3.2 summarises the post-development habitats, hedgerows, and watercourses, which may be created and enhanced. All net gain will be provided on Site through the creation and enhancement, of habitats, and hedgerows. No off-Site habitat creation or enhancement is required.

3.3.2 The banks of watercourses will be enhanced with additional planting to maximise their value to wildlife, although there will be no instream or bankside works. Ditches will be enhanced to promote the riparian corridor and improve water quality.

3.3.3 The approach to improving biodiversity across the Site has taken account of the existing landscape and the presence of important features such as woodland, hedgerows, ponds, and watercourses. These features will be retained and protected during construction as set out in the OCEMP (ES Appendix 5.1) and subject to enhancement and management measures set out in the OLEMP where possible (ES Appendix 7.7).

3.3.4 A precautionary approach has been taken for the Proposed Development's overall BNG calculation and a conservative '*condition*' score has been used. For instance, some habitats may be able to achieve a higher condition score than is proposed, essentially enhancing them from 'poor' to 'good' condition rather than just 'moderate'. The management of these habitats is adaptive and will be reviewed as the design evolves to maximise the net gains to habitats such that BNG units will be increased. These further enhancements may be achieved in the following circumstances:

- The layout and construction of the Proposed Development incorporates buffers between hedgerow boundaries and watercourses. Within these buffers habitats may achieve a better post-development condition than the same habitat immediately adjacent and which may be located under solar arrays (i.e. the 'other neutral grassland' which will be created under solar arrays and replace 'modified grassland' has a target condition of 'moderate', although buffers could achieve a target condition of 'good').

- Where aisles exist between solar arrays, or where none are erected for topographical or efficiency reasons, then habitats may also achieve a better post-development condition than proposed. This will be due to the combined effects of increased light and rainfall, lack of shade, and the management of grazing across the Site.
- Where there is no solar infrastructure, for example under the overhead line and around supporting pylons, habitats will be easier to manage and may facilitate a better increase in habitat condition.
- Other lowland acid grassland has been proposed only for Dean Moor CWS and along the watercourses which flow northwards and coalesce near Rigg House Farm Buildings. This habitat type is more distinctive than modified grassland and will give a greater BNG uplift. However, it is not proposed to establish this habitat across the wider given uncertainties of soil chemistry which may not be suitable. Given the potential difficulties of creating this habitat it has been assigned a target condition of 'poor'. However, if feasible, and aligning with the projects ambition, it may be possible to achieve a target condition of 'moderate' in 30 years with appropriate management.
- The permitted path which follows the western boundary of the Site is not included within this assessment. It is to be confirmed whether this path can be established using a grassland seed mix or will require some light aggregate.

Figure 3.3: Post-development habitats, hedgerows and watercourses recorded on Site in Areas A, B and D

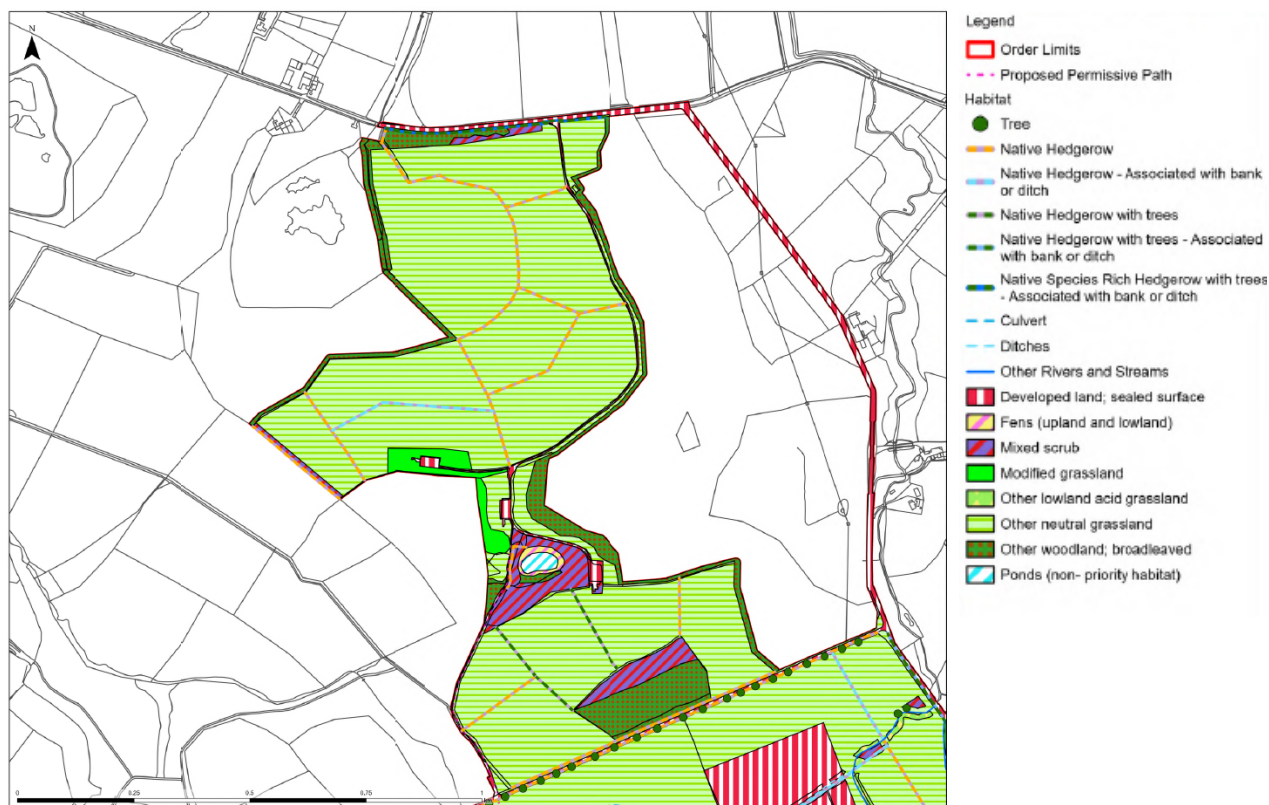


Figure 3.4: Post-development habitats, hedgerows and watercourses recorded on Site in Area C

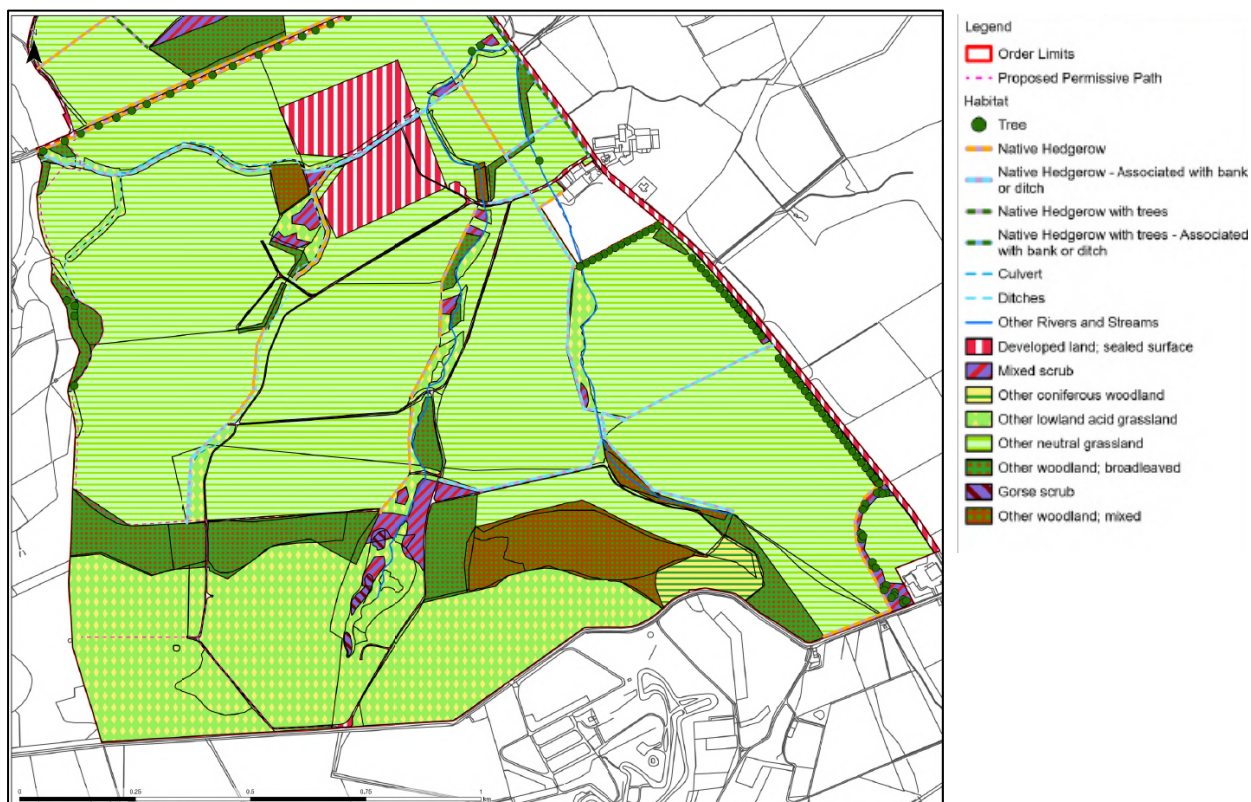


Table 3.2: Post-development: Habitats, hedgerows, and watercourses created and enhanced on the Site

(Habitat features are measured in hectares while hedgerows and watercourses are measured in km)

Habitat type (UKHab)	Distinctiveness	Condition	Strategic significance	Area (ha) / Length (km)	Habitat units
Created					
Other neutral grassland	Medium	Moderate	Not in LNRS	176.25	1044.30
Other lowland acid grassland	Medium	Poor	Formally identified in LNRS	41.022	163.64
Other lowland acid grassland	Medium	Good	Formally identified in LNRS	0.41	2.97
Mixed scrub	Medium	Moderate	Formally identified in LNRS	3.96	27.39
Other woodland; broadleaved	Medium	Good	Ecologically desirable but not in LNRS	2.00	7.71
Other woodland; broadleaved	Medium	Moderate	Ecologically desirable but not in LNRS	9.61	44.53
Other woodland; mixed	Medium	Good	Ecologically desirable but not in LNRS	0.46	1.93
Other woodland; mixed	Medium	Moderate	Ecologically desirable but not in LNRS	0.86	2.43
Native hedgerow	Low	Good	Formally identified in LNRS	2.13	8.61
Developed land-sealed surface	Very low	Not applicable	Not in LNRS	9.35	0
Enhanced					
Modified grassland	Low	Poor to Moderate	Not in Local Strategy	1.86	10.75
Other lowland acid grassland	Medium	Moderate to Good	Formally identified in LNRS	1.30	15.67
Other neutral grassland	Medium	Poor to moderate	Not in LNRS	0.001	0.01

Habitat type (UKHab)	Distinctiveness	Condition	Strategic significance	Area (ha) / Length (km)	Habitat units
Other neutral grassland	Medium	Moderate to good	Not in LNRS	0.251	2.64
Mixed scrub	Medium	Moderate to Good	Formally identified in LNRS	2.64	33.65
Gorse scrub	Medium	Poor to Moderate	Not in LNRS	0.29	2.05
Other woodland; broadleaved	Medium	Moderate to Good	Formally identified in LNRS	0.65	7.50
Other coniferous woodland	Low	Other woodland; broadleaved	Not in LNRS	1.68	12.98
Other coniferous woodland	Low	Other woodland; mixed	Not in LNRS	0.04	0.28
Hedgerows	Low, Medium and High	Poor to Moderate; Moderate to Good	Formally identified in LNRS	6.37	72.82
Watercourses (ditches)	Moderate	Poor to Moderate	Not in LNRS	1.029	4.24

4. Summary of Post-Development Habitats

4.1 Overview

4.1.1 Below is a brief description of the habitats, hedgerows, and watercourses that may exist on Site once the Proposed Development is operational. For the purpose of this report other measures which enhance the Site for biodiversity, but which are not calculated for in the metric (such as the provision of bird and bat boxes) are not set out herein. The prescriptions and management to achieve the desired condition is outlined in the OLEMP (Appendix 7.7).

4.1.2 Although individual 'rural trees' are included within the LSP (ES Figure 7.6.1-7.6.5), they have not been included within the metric calculations until final numbers have been established. However, the Proposed Developments has undertaken a comprehensive arboricultural survey which is detailed in the OLEMP.

Modified Grassland

4.1.3 Modified grassland will be retained and enhanced around only one of the turbine locations at the Wind Farm. Currently this grassland is in 'poor' condition, but it will be enhanced to achieve a 'moderate' condition.

4.1.4 The majority of the 'modified grassland' on the Site will be replaced with 'other neutral grassland', both in areas which lie beneath solar infrastructure and within habitat buffers.

4.1.5 All other areas of modified grassland will be replaced with 'other lowland acid grassland, or 'other neutral grassland'.

Other Lowland Acid Grassland

4.1.6 The small area of 'lowland acid grassland' which exists on the steep slopes of Thief Gill will be retained as it is a Priority Habitat. It will be retained and enhanced with a final target condition of 'good'.

4.1.7 This habitat will be created along the banks of Thief Gill and the watercourse to its east where soil conditions may be appropriate, and

which have not been subject to intensive grazing practices. As the habitat will be new, it will be managed to achieve at least a 'poor' condition, although a 'moderate' condition is desirable. The habitat will also be created along the watercourse which runs east to west in Area C.

- 4.1.8 This habitat will also be created in Dean Moor CWS to match the sites former habitat type. The success of this habitat will be dependent on soil chemistry which may have been impacted by current intensive agricultural practices. As such it will be subject to ongoing review, with the BNG Metric revised in subsequent iterations if found to be unachievable.

Other Neutral Grassland

- 4.1.9 This habitat type will form the majority of the Site in Areas A, B, and C where the landscape resembles more lowland habitats on completion of the Proposed Development.
- 4.1.10 That which lies under solar infrastructure in Work No. 1 will be managed to achieve a target condition of 'moderate' after 30 years.

Other Woodland: Broadleaved

- 4.1.11 Much of the existing woodland will be retained in its 'moderate' condition, with a small area of 'poor' condition woodland, being enhanced to 'moderate'. Although it is likely that management will diversify ground flora; the understorey and canopy cover, the target condition after 30 years will be 'moderate'. This is a conservative target as efforts will still be made to progress to a 'good' condition.
- 4.1.12 New woodland will be planted in several parts of Area C. This includes a small stand on the western boundary; a small block which will infill existing woodland on the slope of the escarpment; to the east of the upper reaches of Thief Gill to tie in with existing mixed woodland; along Branthwaite Edge Road; along the riparian corridor of Thief Gill downhill as far as Rigg House Farm Buildings, and; a stand to the south east close to the boundary of the Site and along the water course which joins Thief Gill close to Rigg House Farm Buildings. The newly planted woodland will be

managed to achieve a target condition of 'moderate' after 30 years and 'good' where it connects to existing 'moderate' woodland.

Other Woodland: Mixed

- 4.1.13 The small stand which lies to the west of Rigg House Farm will be felled and replaced with mixed scrub. The 'other woodland; mixed' on the escarpment will be managed to achieve a target condition of 'moderate' after 30 years, although it will be the ambition to achieve a 'good' condition in some of the stands.

Other Coniferous Woodland

- 4.1.14 Most of the existing coniferous woodland on-Site will be cleared and/or managed to deliver 'other woodland; mixed' with a target condition of 'moderate' after 30 years.

Mixed Scrub

- 4.1.15 Mixed scrub is found only in Areas B and D. This will be retained and managed to retain its target condition of 'moderate' close to the southernmost wind turbine. Where existing scrub lies to the south of the pond in Area D, it will be enhanced from 'moderate' to 'good' condition after 30 years.
- 4.1.16 Additional scrub will be planted along the northern boundary of the Proposed Development the western boundary of Area A; to the northwest and west of Rigg House Farm; along the riparian corridor of Thief Gill, and in the far southeastern corner of the Site in Area C. Some small, isolated areas of mixed scrub will occur along Branthwaite Edge Road and on the watercourse south of Rigg House Farm buildings. All newly planted scrub will be managed to achieve a target condition of 'moderate' after 30 years of management.

Gorse Scrub

- 4.1.17 Gorse scrub is only present along Thief Gill in three distinct pockets and along a small stretch of the western boundary in Area C. It will all be

enhanced from 'poor' to 'moderate' condition after 30 years of management.

Fens (upland and lowland)

- 4.1.18 This habitat type is limited to the margin of the pond which exists in Area D. It will be retained in its current 'moderate' condition.

Ponds

- 4.1.19 The pond in Area D will be enhanced from 'moderate' to 'good' condition with additional marginal planting to promote its value to wildlife, including aquatic invertebrates and foraging birds and bats. The wetted area will be increased by cutting back encroaching vegetation and making it more accessible. No in-water works to the substrate is anticipated but this will be reviewed once vegetation clearance has been completed.
- 4.1.20 The ephemeral pond to the southwest of Area C will be retained in its current form and not subject to any management. However, the relaxing of grazing and better grass management will promote the growth of marginal vegetation and reduce poaching.

Developed Land: Sealed Surface

- 4.1.21 This habitat exists as both the main area of solar infrastructure in Area C. It also accounts for tracks across the Site, principally to access the Wind Farm but also throughout Area C from the access off Branthwaite Edge Road. It has no value for BNG calculations.
- 4.1.22 This habitat has been assigned to the Permissive path along the western boundary of the Proposed Development. However, the final design of this path has not been confirmed such that it may incorporate permeable membranes to improve drainage.

Hedgerows

- 4.1.23 Hedgerows which are currently in 'poor' condition will be enhanced to achieve a target condition of 'moderate' after 30 years on management. Similarly, those which are currently in 'moderate' condition will be enhanced to a 'good' condition after 30 years.

- 4.1.24 Where new sections of hedgerow are proposed they will be managed to achieve a target condition of 'moderate' after 30 years of management.

Watercourses

- 4.1.25 The MoRPh survey assessed all watercourses across the site identified during the PEA (ES Appendix 8.1). However, the application of the MoRPh methodology as part of the Statutory Metric has categorised them into watercourses, ditches and culverts in line with guidance to correctly apportion BNG units.

Watercourses: Rivers and Streams

- 4.1.26 The MoRPh survey categorised two watercourses on-Site, both in Area C: Thief Gill, and that to its east which is unnamed. The unnamed watercourse arises in the southeast corner of Area C and flows northwards in Area C to join with Thief Gill close to Rigg House Farm Buildings. Both of these watercourses are in 'moderate' condition but suffer from major encroachment on both banks from livestock.
- 4.1.27 The full length of both watercourses will be enhanced with diverse planting. There will be no instream works, nor engineering works to the bank face. Opportunities to further enhance the watercourses by preventing grazing access through the erection of fences will be pursued. This may enable a 'good' condition to be achieved within 30 years.
- 4.1.28 It is intended to only enhance the watercourses in Area C where fences to protect solar infrastructure will not be necessary within 10m of the watercourse. Fencing is considered to be 'encroachment' within the metric condition assessments.

Watercourses: Ditches

- 4.1.29 Although the PEA (Appendix 8.1) identified several watercourses in addition to those mentioned above, some have subsequently been defined as ditches. All ditches are currently in 'poor' condition'.
- 4.1.30 The inclusion of riparian buffers to attenuate surface flows and changes in agricultural management as a consequence of the cessation of grazing will

improve water quality. Buffer planting along ditch edges will improve botanical cover and diversity along marginal fringes, while limiting vehicular access to appropriate crossing points and the lack of poaching will prevent physical damage to the banktop.

- 4.1.31 Ditches will be managed to achieve a target condition of 'moderate' after 30 years of management. Further opportunities to enhance ditches will be pursued through the timeframe of the Proposed Development.

Watercourses: Culverts

- 4.1.32 There are a small number of culverted sections of ditches across the Site. This includes the northwest of Area C and the southeast of Area C. These will not be subject to any management and therefore not enhanced.

5. Biodiversity Net Gain Metric

5.1 Overview

5.1.1 This section contains the headline results of the preliminary BNG calculations and confirms how the project complies with the Trading Rules, including the Key Rules and Principles set out in the Statutory Metric User Guide. The completed statutory metric is provided in full in Appendix C.

5.2 Statutory Metric Outcome

5.2.1 As shown in Figure 5.1 below, the retention, enhancement, creation, and management of habitats, hedgerows and ditches will lead to an overall net gain.

5.2.2 The values achieved with the BNG Metric for habitats, hedgerows and watercourses are as follows:

- Habitat units = 114.69%
- Hedgerow units = 44.84%
- Watercourse units = 12.56%

5.2.3 The metric has complied with all trading rules.

5.2.4 All Key Rules and Principles have been complied with, and the requirements of both national and local policy have been satisfied.

Figure 5.1: Headline results from Statutory Metric

Headline Results		results menu	
Scroll down for final results ⚠			
On-site baseline	Habitat units	721.09	
	Hedgerow units	81.89	
	Watercourse units	33.73	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	1548.10	
	Hedgerow units	118.61	
	Watercourse units	37.96	
On-site net change (units & percentage)	Habitat units	827.01	114.69%
	Hedgerow units	36.72	44.84%
	Watercourse units	4.24	12.56%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	827.01	
	Hedgerow units	36.72	
	Watercourse units	4.24	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	827.01	
	Hedgerow units	36.72	
	Watercourse units	4.24	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	114.69%	
	Hedgerow units	44.84%	
	Watercourse units	12.56%	
Trading rules satisfied?	Yes ✓		

6. Conclusion

- 6.1.1 The Proposed Development has the potential to deliver an overall increase in BNG of 114.69% for habitats; 44.84% for hedgerows; and 12.56% for watercourses. This net gain has been achieved by taking a conservative approach to the BNG assessment.
- 6.1.2 It is noted that the proposed creation of 'lowland acid grassland' over Dean Moor CWS, along the watercourses which arise to the south of Area C, and ditches may be difficult due to nutrient load caused by intensive grassland management for livestock grazing. It is intended to undertake further consultation with CWT during the establishment of this habitat. Currently it is suggested to achieve a 'poor' condition score although if the habitat successfully establishes, then it will be proposed to achieve a 'moderate' score.
- 6.1.3 'Other neutral grassland' is proposed across much of Area A, B, and the northern part of Area C. This will provide a diverse sward of benefit for several species. That under solar arrays can achieve a 'moderate' condition. Nonetheless, the Proposed Development will seek to maximise BNG units where possible, such that habitats under solar areas would be managed to promote species diversity and sward heterogeneity and may also achieve 'good' condition.
- 6.1.4 Habitat buffers adjacent to hedgerows will likely be able to achieve a greater BNG score, especially as they will be largely exempt from grazing and cut after both grasses and plants have flowered and set seed. As mentioned above these will form part of the wider other neutral grassland areas and be managed to achieve a 'good' condition.
- 6.1.5 Enhancements to hedgerows presented in the LSP (ES Figure 7.6.1-7.6.5) will occur throughout the Site with those of 'poor' and 'moderate' condition, being managed to achieve a single step increase in the condition hierarchy. New hedgerows will be created across the Site to support screening and to enhance green infrastructure connectivity. These will be managed to achieve a target condition of 'good' from the outset.

- 6.1.6 Both watercourses and ditches will benefit from enhanced planting along the waters edge's which will improve water quality. The cessation of grazing which will prevent poaching, as well as limiting vehicular access to specific crossing points, will prevent damage to the bank top.
- 6.1.7 This assessment presents the potential baseline for BNG to be achieved by the Proposed Development. The OLEMP (ES Appendix 7.7) sets out a minimum commitment to deliver BNG (%) for habitats, hedgerows, and watercourses. This is a conservative ('worst-case') estimate based on the LSP.
- 6.1.8 The final layout, to be secured by a DCO Requirement, will inform a final Landscape and Ecology Plan ('LEP'), to be substantially in accordance with the LSP, and LEMP, to be substantially in accordance with the OLEMP, for its delivery and management. The BNG Metric in force at the time will be recalculated based on a level of detail not available at this stage, including that based on further consultation with CWT. The LEMP will then set out the mechanism by which BNG will be delivered.
- 6.1.9 The Proposed Development has demonstrated that it has the potential to deliver a significant increase in biodiversity across a wide range of habitats while meeting all legislative and policy requirements relating to biodiversity. Further, the design has sought to improve Green Infrastructure and support habitat and species assemblages which are present in the local landscape. Within the design it has included opportunities for people to benefit from a greener environment.
- 6.1.10 The Proposed Development is an opportunity to establish and support habitats identified in Cumbria's LNRS which have an intrinsic benefit to a wide range of species. Restoration and the ongoing management of Dean Moor CWS highlights how this Proposed Development is pursuing biodiversity benefits in the long-term.

Appendix A Key Rules and Principles

The statutory biodiversity metric user guide details the BNG Key Rules. This assessment has abided by these rules and is summarised below.

Statutory Biodiversity Metric Key Rules	Justification on how this Assessment has abided by the Rules.
Rule 1: <i>The trading rules of this biodiversity metric must be followed.</i>	All trading rules have been met.
Rule 2: <i>Biodiversity unit outputs, for each type of unit, must not be summed, traded, or converted between types. The requirement to deliver at least a 10% net gain applies to each type of unit.</i>	Biodiversity unit outputs have not been summed traded or converted between types.
Rule 3: <i>To accurately apply the biodiversity metric formula, you must use the statutory biodiversity metric calculation tool or small sites biodiversity metric tool (SSM) for small sites.</i> <i>The tools remove the need for a user to manually calculate the change in biodiversity value.</i> <i>The tool will summarise the results of the calculation and inform a user whether the biodiversity net gain objective has been met.</i>	The statutory biodiversity metric tool has been used to calculate the biodiversity net gain.
Rule 4: <i>In exceptional ecological circumstances, deviation from this biodiversity metric methodology may be permitted by the relevant planning authority.</i>	There have been no deviations from the published methodology.

The statutory biodiversity metric user guide details the BNG Key Principles. These Key Principles have been taken into account of this assessment and are presented in the table below.

Statutory Biodiversity Metric Key Principles	Justification on how this Assessment has considered the Principles
Principle 1: <i>The metric assessment should be completed by a competent person.</i>	The metric has been undertaken by suitably qualified and experienced ecologist.
Principle 2: <i>The use of this biodiversity metric does not override existing biodiversity protections, statutory obligations, policy requirements, ecological mitigation hierarchy or any other requirements. This includes consenting or licensing processes, for example woodlands.</i>	Legislative and policy requirements for protected and notable habitats and species, aside from BNG, are covered within the supporting chapter (Chapter 8: Biodiversity) of the Environmental Statement.
Principle 3: <i>This biodiversity metric should be used in accordance with established good practice guidance and professional codes.</i>	The biodiversity metric was used in accordance with the guidance.

Statutory Biodiversity Metric Key Principles	Justification on how this Assessment has considered the Principles
Principal 4: <i>This biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.</i>	Expert ecological expertise has been used throughout the development of the Proposed Development and BNG assessment.
Principal 5: <i>Biodiversity units are a proxy for biodiversity and should be treated as relative values.</i>	The biodiversity units will only be used a method for measuring potential net gains in biodiversity on the Site and has been used in combination with expert ecological advice to take into account wider ecological considerations, and other relevant legislation and planning policy.
Principal 6: <i>This biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.</i>	The biodiversity metric has been used as a tool to aid recommendations for the Proposed Development.
Principal 7: <i>Habitat interventions need to be realistic and deliverable within a relevant project timeframe.</i>	<p>The most appropriate post intervention habitats have been chosen for the Proposed Development. This includes grassland, woodland, areas of scrub planting, and the enhancement of hedgerows and ditches. Several habitats will be retained, including existing woodland, scrub, permanent and ephemeral ponds and acid grassland.</p> <p>Habitats have been selected that can be delivered with the Proposed Development time frame and are contextually appropriate to the open habitat of the landscape.</p>
Principal 8: <i>Created and enhanced habitats should be, where practical and reasonable, local to any impact and deliver strategically important outcomes for nature conservation.</i>	All created habitats will be located within the Site boundary.
<p>Principal 9: <i>This biodiversity metric does not enforce a minimum habitat size ratio for compensation of losses. Proposals should aim to:</i></p> <ul style="list-style-type: none"> <i>maintain habitat extent - supporting more, bigger, better and more joined up ecological networks;</i> <i>ensure that proposed or retained habitat parcels are of sufficient size for ecological function.</i> 	<p>The Site is currently pastoral land which is heavily grazed by cattle and sheep. The biodiversity enhancements will include appropriate grassland management to facilitate species diversification and sward heterogeneity. Enhancements to existing hedgerows through underplanting and marginal planting, as well as the planting and expansion of scrub and woodland will improve the green infrastructure functionality of the Site for its own benefit and for the benefit of the wider green infrastructure network.</p> <p>The area of Dean Moor CWS which falls within the Site will be managed sympathetically to hopefully restore former botanical diversity in the form of purple moor grass and rush pasture communities.</p>

Appendix B Condition Assessment Sheets

Modified Grassland (low distinctiveness)

Condition Assessment Criteria (based on Natural England (2022b))	Modified grassland – Parcels 44-53	Modified grassland – Parcels 58-90
Criterion 1: 6-8 species per m ² including at least 2 forbs ⁵	Fail – average of 5 species per m ²	Fail – average of 5 species per m ²
Criterion 2: Sward height is varied (at least 20% of sward above 7 cm high and at least 20% below 7 cm high)	Fail – fields are heavily grazed therefore less than 20 % is above 7 cm high	Fail – fields are heavily grazed therefore less than 20 % is above 7 cm high
Criterion 3: Scattered scrub accounts for less than 20% of cover	Pass – no scrub present	Pass – no scrub present
Criterion 4: Physical damage is evident in less than 5% of total area.	Fail – physical damage (excessive grazing and mowing) covers > 5 % of area	Fail – physical damage (excessive grazing and mowing) covers > 5 % of area
Criterion 5: Cover of bare ground is between 1% and 10%	Fail – bare ground from poaching is more than 10 %	Fail – bare ground from poaching is more than 10 %
Criterion 6: Cover of bracken is less than 20%	Pass – none present	Pass – none present
Criterion 7: Absence of invasive non-native species	Pass – none present	Pass – none present
Number of Criteria Met	3	3
Condition	Poor	Poor

Lowland dry acid and other neutral grassland (medium distinctiveness)

Condition Assessment Criteria (based on Panks et al. (2022))	Lowland dry acid grassland – Parcels 28 & 29	Other neutral grassland – Parcels 30-33, 35 & 38	Other neutral grassland – Parcels 34, 36, 37, 39, 40
Criterion 1: Closely matches UKHab definition ¹	Contains numerous indicator species - Pass	Contains numerous indicator species - Pass	Contains indicator species - Pass
Criterion 2: Sward height is varied (at least 20% of sward above 7 cm high and at least 20% below 7 cm high)	Sward height suitably varied – Pass	Sward height uniformly above 7 cm, rank in places - Fail	Sward height uniformly above 7 cm, rank in places - Fail
Criterion 3: Cover of bare ground is between 1% and 5%	Cover of bare ground is ~10 %, rock exposure - Fail	Cover of bare ground is over 5 % - Pass	Bare ground cover ~ 10% - Fail
Criterion 4: Scattered scrub/bramble or bracken accounts for less than 20% of cover	Scattered scrub present but ~ 10% cover– Pass	Some scattered scrub present, but less than 20 % of area – Pass	Scattered scrub present but ~ 10% cover– Pass
Criterion 5: Absence of species that are indicative of suboptimal condition, damaged ground are less than 5 % of area. Any presence of invasive non-native species (Schedule 9) results in failure.	Physical damage evident above 5 % cover – Fail	Physical damage evident but below 5 % cover, as are species of sub-optimal condition – Pass	Some physical damage evident, but below 5 % cover; species indicative of suboptimal condition are dominant – Fail
Criterion 6: Greater than 10 species per metre squared ²		8 species per m ² - Fail	8 species per m ² - Fail
Number of Criteria Met	3	4	2
Condition	Moderate	Moderate	Poor

Condition Assessment Criteria (based on Panks et al. (2022))	Other neutral grassland – Parcels 41, 42, 43
Criterion 1: Closely matches UKHab definition ³	Contains numerous indicator species - Pass
Criterion 2: Sward height is varied (at least 20% of sward above 7 cm high and at least 20% below 7 cm high)	Sward height uniformly above 7 cm - Fail
Criterion 3: Cover of bare ground is between 1% and 5%	Cover of bare ground is ~ 1 % - Pass
Criterion 4: Scattered scrub/bramble or bracken accounts for less than 20% of cover	No scattered scrub present – Pass
Criterion 5: Absence of species that are indicative of suboptimal condition, damaged ground are less than 5 % of area. Any presence of invasive non-native species (Schedule 9) results in failure.	Physical damage evident in less than 5 % cover – Pass
Criterion 6: Greater than 10 species per metre squared ⁴	8 species per m ² – Fail
Number of Criteria Met	4
Condition	Moderate

Woodland

Condition Assessment Indicator ⁶ (based on Natural England (2022b))	Other woodland; broadleaved – Parcels 1-9	Other coniferous woodland – Parcels 10-14
Indicator 1: age distribution of trees	Two age classes present (2)	One age class present (1)
Indicator 2: wild, domestic, feral herbivore damage	No significant browsing damage evident (3)	No significant browsing damage evident (3)
Indicator 3: invasive plant species	No invasive species present (3)	No invasive species present (3)
Indicator 4: number of native tree species	>5 native tree or shrub species (3)	Single non-native species (1)
Indicator 5: cover of native tree and shrub species	>80% of canopy trees and understorey shrubs are native (3)	>50% canopy trees are non-native (1)
Indicator 6: open space within woodland	<20% of woodland has temporary open areas (3)	<10% of woodland has areas of open space (1)
Indicator 7: woodland regeneration	Only one age class present (2)	No classes or regrowth (1)
Indicator 8: tree health	<10% tree mortality (3)	No tree mortality (3)
Indicator 9: vegetation and ground flora	No recognisable NVC community present (1)	No NVC community (1)
Indicator 10: woodland vertical structure	One storey present (1)	One storey present (1)
Indicator 11: veteran trees	No veteran trees present (1)	No veteran trees present (1)
Indicator 12: amount of deadwood	Very little deadwood present (1)	Very little deadwood present (1)
Indicator 13: woodland disturbance	>1 ha of nutrient improvement (2)	>1 ha of nutrient improvement (2)
Score	28	20
Condition	Moderate	Poor

Condition Assessment Indicator (based on Natural England (2022b))	Other woodland; mixed – Parcels 15-18
Indicator 1: age distribution of trees	Two age classes present (2)
Indicator 2: wild, domestic, feral herbivore damage	No significant browsing damage evident (3)
Indicator 3: invasive plant species	No invasive species present (3)
Indicator 4: number of native tree species	>5 native tree or shrub species (3)
Indicator 5: cover of native tree and shrub species	>80% of canopy trees and understorey shrubs are native (3)
Indicator 6: open space within woodland	<20% of woodland has temporary open areas (3)
Indicator 7: woodland regeneration	Only one age class present (2)
Indicator 8: tree health	<10% tree mortality (3)
Indicator 9: vegetation and ground flora	No recognisable NVC community present (1)
Indicator 10: woodland vertical structure	One storey present (1)
Indicator 11: veteran trees	No veteran trees present (1)
Indicator 12: amount of deadwood	Very little deadwood present (1)
Indicator 13: woodland disturbance	>1 ha of nutrient improvement (2)
Score	28
Condition	Moderate

Parcel 19 is felled woodland; the Metric automatically assumes “good” condition in the absence of survey data therefore no condition assessment is needed.

Scrub

Condition Assessment Criteria (based on Natural England (2022b))	Mixed scrub – Parcels 15-18	Gorse scrub – Parcels 21-25
Criterion 1: parcel is a good representation of its UKhab description. At least 80% is native, with at least 3 woody species, no one of which accounts for more than 75% cover	Resembles UKhab description, but comprised of multiple woody species, including willow, alder, and birch (willow dominant, therefore described as scrub) – Pass	Resembles UKhab description, but comprised of single species – Fail
Criterion 2: seeds, saplings, young, and mature shrubs are all present	Three out of four groups present – Pass	Two of four groups present – Pass
Criterion 3: absence of invasive non-native species (Schedule 9); species indicative of sub-optimal condition account for <5% cover	No invasive species present; species indicative of sub-optimal condition absent - Pass	No invasive species present; species indicative of sub-optimal condition absent – Pass
Criterion 4: scrub has a well developed edge with scattered scrub and tall grassland/forbs between scrub and adjacent habitat	Scrub edges tend to be fenced and adjacent to grazing land, therefore no edge developed – Fail	Scrub edges onto grazing land, edge is undeveloped – Fail
Criterion 5: clearings, glades, and rides present	Clearings glades, and rides present throughout scrub – Pass	None present, scrub parcels are reasonably small – Fail
Number of criteria met	4	2
Condition	Moderate	Poor

Fens

Condition Assessment Criteria (based on Natural England (2022b))	Fens (upland and lowland) – Parcels 54-55 – reedbed/swamp	Fens (upland and lowland) – Parcels 56-57 – acid/neutral flush
Criterion 1: waterbed near surface year-round ⁷	Assumed pass – surrounding ponds	Assumed pass
Criterion 2: good representation of its type with indicator species for habitat sub-type	<i>Typha latifolia</i> is the dominant species – Fail	Few indicator species present. Sunspruge is the dominant species - Fail
Criterion 3: water supplies are good quality, low turbidity	Water quality of water column over vegetation not turbid – Pass	Flowing water not turbid – Pass
Criterion 4: cover of scrub and scattered trees <10%	Cover <10%, but trees are present - Pass	None present – Pass
Criterion 5: cover of bare ground <5%	None present – Pass	None present – Pass
Criterion 6: absence of invasive non-native species (Schedule 9), species indicative of sub-optimal condition <5% cover	None present – Pass	None present – Pass
Criterion 7⁸: No more than 25% of the habitat has continuous cover of litter preventing generation		None present – Pass
Criterion 9⁹: reedbed has a diverse structure with 60-80% cover of <i>Phragmites australis</i> . May include wet woodland or open water.	<i>Typha latifolia</i> is the dominant species – Fail	
Number of criteria met	5	6
Condition	Moderate	Good

Ponds (non-priority habitat)

Condition Assessment Criteria (based on Natural England (2022b))	P1	P2	P3	P4
Criterion 1: good water quality, with low turbidity	Water is low turbidity - Pass	Water is low turbidity – Pass	Water is low turbidity – Pass	Water is low turbidity – Pass
Criterion 2: surrounded by moderate or better distinctiveness habitat for at least 10 m	Surrounded by neutral grassland - Pass	Surrounded by scrub - Pass	Surrounded by neutral grassland - Pass	Surrounded by modified grassland - Fail
Criterion 3: <10% cover of duckweed or algae	Cover <10% - Fail	Cover <10% - Fail	Cover <10% - Fail	Cover > 10% - Fail
Criterion 4: pond is not artificially connected to other waterbodies	No nearby waterbodies to be connected to – Pass	No nearby waterbodies to be connected to – Pass	No nearby waterbodies to be connected to – Pass	No nearby waterbodies to be connected to – Pass
Criterion 5: pond levels can fluctuate naturally	Assumed pass	Assumed pass	Assumed pass	Assumed pass
Criterion 6: absence of invasive non-native plants and animals ¹⁰	Assumed pass	Assumed pass	Assumed pass	Assumed pass
Criterion 7: pond not artificially stocked with fish	Assumed pass	Boat present on shore – assumed fail	Assumed pass	Assumed pass
Criterion 8: emergent or floating plants cover 50% of pond area	None present - Fail	None present – Fail	None present – Fail	Some present, but <50% - Fail
Criterion 9: pond surface is no more than 50% shaded by scrub / trees	Cover <50% - Pass	Cover <50% - Pass	Cover <50% - Pass	Cover <50% - Pass
Number of criteria met	7	7	7	3
Condition	Moderate	Moderate	Moderate	Moderate

Hedges / Linear features

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number				
	H1 – Native hedgerow	H2 – Native hedgerow	H3 – Native hedgerow	H4 – Native species rich hedgerow w/bank/ditch	H5 – Native hedgerow
Criterion A1: >1.5m average height, along length	Y	Y	Y	Y	Y
Criterion A2: >1.5 m average width along length	Y	Y	Y	Y	Y
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	N	N	N	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	Y	Y	Y	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	Y	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	Y	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge					
Criterion E2: ¹¹ At least 95 % of hedgerow trees are in good condition					
Number of criteria met ¹²	7	7	7	7	7
Condition	Good	Good	Good	Good	Good

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number				
	H6 – Native hedgerow	H7 – Native hedgerow	H8 – Native hedgerow	H9 – Native hedgerow	H10 – Native hedgerow
Criterion A1: >1.5m average height, along length	Y	Y	Y	Y	Y
Criterion A2: >1.5 m average width along length	Y	Y	Y	Y	Y
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	N	N	N	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	N	Y	N	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	Y	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	Y	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge					
Criterion E2: ¹³ At least 95 % of hedgerow trees are in good condition					
Number of criteria met ¹⁴	7	6	7	6	7
Condition	Good	Moderate	Good	Moderate	Good

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number				
	H11 – Native hedgerow	H12 – Native hedgerow	H13 – Native hedgerow	H14 – Native hedgerow	H16 – Native hedgerow
Criterion A1: >1.5m average height, along length	Y	Y	Y	Y	Y
Criterion A2: >1.5 m average width along length	Y	Y	Y	Y	Y
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	N	N	N	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	N	Y	N	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	Y	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	N	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge					
Criterion E2: ¹⁵ At least 95 % of hedgerow trees are in good condition					
Number of criteria met ¹⁶	7	6	7	5	7
Condition	Good	Moderate	Good	Moderate	Good

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number				
	H17 – Native hedgerow	H18 – Native hedgerow	H19 – Native hedgerow	H20 – Native hedgerow	H21 – Native hedgerow w/bank or ditch ¹⁷
Criterion A1: >1.5m average height, along length	Y	Y	Y	Y	N
Criterion A2: >1.5 m average width along length	Y	Y	Y	Y	Y
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	N	N	N	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	N	Y	N	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	Y	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	Y	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge	Y	N	N		
Criterion E2: ¹⁸ At least 95 % of hedgerow trees are in good condition	N	N	N		
Number of criteria met¹⁹	8	6	7	6	6
Condition	Good	Poor	Moderate	Moderate	Good

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number				
	H23 – Native hedgerow w/bank or ditch ²⁰	H24 – Native hedgerow w/bank or ditch ²¹	H25 – Native hedgerow w/bank or ditch	H26 – Native hedgerow w/bank or ditch	H27 – Native hedgerow w/bank or ditch
Criterion A1: >1.5m average height, along length	N	N	N	Y	N
Criterion A2: >1.5 m average width along length	N	N	N	N	Y
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	N	N	N	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	N	Y	N	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	Y	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	Y	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge					
Criterion E2: ²² At least 95 % of hedgerow trees are in good condition					
Number of criteria met ²³	5	5	5	5	6
Condition	Moderate	Moderate	Moderate	Moderate	Moderate

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number				
	H28 – Native hedgerow	H29 – Native hedgerow w/trees & /bank or ditch	H30 – Native hedgerow w/bank or ditch	H31 – Native hedgerow w/bank or ditch	H32 – Native hedgerow
Criterion A1: >1.5m average height, along length	Y	Y	N	Y	Y
Criterion A2: >1.5 m average width along length	N	Y	N	N	N
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	Y	Y	N	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	N	Y	N	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	N	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	Y	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge		N			
Criterion E2: ²⁴ At least 95 % of hedgerow trees are in good condition		Y			
Number of criteria met ²⁵	8	7	6	5	6
Condition	Good	Moderate	Moderate	Moderate	Moderate

Condition Assessment Criteria (based on Panks et al. (2022))	Parcel Number			
	H33 – Native hedgerow w/bank or ditch	H34 – Native hedgerow /bank or ditch	H35 – Native hedgerow	H36 – Native hedgerow w/bank or ditch
Criterion A1: >1.5m average height, along length	N	N	N	N
Criterion A2: >1.5 m average width along length	N	Y	N	N
Criterion B1: gap between ground and base of canopy <0.5 m for >90% of length	N	Y	Y	N
Criterion B2: Gaps make up <10% of total length; no canopy gaps >5 m	Y	N	Y	Y
Criterion C1: >1 m wide strip of undisturbed ground with perennial herbaceous vegetation for > 90% of length: measured from outer edge of hedgerow; present on at least 1 side of hedgerow	Y	Y	Y	Y
Criterion C2: plant species indicative of soil nutrient enrichment dominate <20% of undisturbed ground	Y	Y	Y	Y
Criterion D1: >90% of hedgerow and undisturbed ground is free of non-native and neophyte species	Y	Y	Y	Y
Criterion D2: >90% of hedgerow or undisturbed ground is free of damage caused by human activity	Y	Y	Y	Y
Criterion E1: At least 1 mature tree per 30 m section of hedge				
Criterion E2: ²⁶ At least 95 % of hedgerow trees are in good condition				
Number of criteria met ²⁷	5	6	6	5
Condition	Moderate	Moderate	Moderate	Moderate

Line of trees

Condition Assessment Criteria (based on Natural England (2022b))	Line of trees
Criterion 1: at least 70% of trees are native species	Pass – sycamore present, but not more than 30 % of trees
Criterion 2: canopy is predominantly continuous with gaps making up <10% of area, no gaps >5m wide	Pass – few gaps for field gates, but canopy is mostly continuous
Criterion 3: one or more trees contains veteran features	Pass – multiple trees with veteran features
Criterion 4: 6m of undisturbed naturally vegetated area both sides of feature – free from farming and other activities	Fail – road and farmland within 6m
Criterion 5: at least 95% of trees (excluding veterans or deadwood) are in good condition with little to no evidence of impacts by livestock, wild animals, pests, diseases, or human activity	Pass – no evidence of damaging activity
Number of criteria met	4
Condition	Moderate

Water course condition assessment

Watercourse Name	Thief Gill	Unnamed Watercourse
Baseline positive and negative scores		
Bank top scores		
B1 - Bank top vegetation structure	1.33	1
B2 - Bank top tree feature richness	0	0
B3 - Bank top water-related features	0.33	0
B4 - Bank top NNIPS cover	0	0
B5 - Bank top managed ground cover	-2	-1.666
Bank face scores		
C1 - Bank face riparian vegetation structure	1.166	0.833
C2 - Bank face tree feature richness	1.166	0
C3 - Bank face natural bank profile extent	2.666	2.5
C4 - Bank face natural bank profile richness	2.833	2.666
C5 - Bank face natural bank material richness	1.666	1.666
C6 - Bank face bare sediment extent	1.666	1.666
C7 - Bank face artificial bank profile extent	-0.833	-0.5
C8 - Bank face reinforcement extent	0	0
C9 - Bank face reinforcement material severity	0	0
C10 - Bank face NNIPS cover	0	0
Channel margin scores		
D1 - Channel margin aquatic vegetation extent	0.166	0.666
D2 - Channel margin aquatic morphotype richness	0	0
D3 - Channel margin physical feature extent	0.666	0.666
D4 - Channel margin physical feature richness	0.833	1.166
D5 - Channel margin artificial features	0	0
In-channel feature scores		
E1 - Channel aquatic morphotype richness	1	1
E2 - Channel bed tree features richness	0.166	0.166
E3 - Channel bed hydraulic features richness	0.166	0
E4 - Channel bed natural features extent	2.666	1.833
E5 - Channel bed natural features richness	2.166	1.166
E6 - Channel bed material richness	3.333	2.5
E7 - Channel bed siltation	-2	-0.666
E8 - Channel bed reinforcement extent	0	0
E9 - Channel bed reinforcement severity	0	0
E10 - Channel bed artificial features severity	-0.833	-1.333
E11 - Channel bed NNIPS extent	0	0
E12 - Channel bed filamentous algae extent	-1.666	-1.5
River Type	D	D
Preliminary Score	0.646423752	0.590418
Condition	Moderate	Moderate

Green= positive indicators, red=negative indicators

Ditch Assessment

Condition Sheet: DITCH Habitat Type

Habitat Type

Watercourses - Ditches

Habitat Description

See the Statutory Biodiversity Metric User Guide.

On-site or off-site, site name and location	Dean Moor Solar Farm	Survey date and Surveyor name	27/06/2024 Justine Thompson Chris Jones									
Limitations (if applicable)		Survey reference (if relating to a wider survey)										
		Habitat parcel reference										
		Grid reference										
Condition Assessment Criteria		NY 04259	NY 04312	NY04 35022	NY04 4722	NY04 57223	NY04 09523	NY04 01523				
		22722	22773	826	3132	384	326	386				
		Criterion passed (Yes or No)										Notes (such as justification)
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	N	N	N	N	N	N	N				
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	N	N	N	N	N	N	N				
C	There is less than 10% cover of filamentous algae and/or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	Y	N	N	N	Y	Y	Y				
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	N	N	N	N	N	N	N				
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Y	Y	N	N	Y	N	N				
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	N	N	N	N	N	N	N				
G	Less than 10% of the ditch is heavily shaded.	Y	Y	Y	Y	Y	Y	Y				
H	There is an absence of non-native plant and animal species ¹ .	Y	Y	Y	Y	Y	Y	Y				
Number of criteria passed		4	3	2	2	3	3	3				
Assessment Result (out of 8 criteria)	Condition Assessment Score	Score Achieved x/8										
Passes 8 criteria	Good (3)											
Passes 6 or 7 criteria	Moderate (2)											
Passes 5 or fewer criteria	Poor (1)	POOR	POOR	POOR	POOR	POOR	POOR	POOR				
Suggested enhancement interventions to improve condition score												

Appendix C Statutory Metric Calculation

The Statutory Biodiversity Metric

Auditing and accounting for biodiversity

Calculation Tool

Open Tool



The Statutory Biodiversity Metric
Start page

Project details

Project details			
Planning authority:			
Project name:			
Applicant:			
Application type:			
Planning application reference:			
Completed by:	Iain Addereton		
Date of metric completion:	30.1.25		
Reviewer:			
Calculation iteration:			
Planning authority reviewer:			
Date of planning authority review:			
Target % net gain:	10%		
Irreplaceable habitat present at baseline:	No ✓		
Total site area - including irreplaceable habitat area (hectares):	276.65	Irreplaceable habitat site area (hectares):	0.00
Total off-site area - including irreplaceable habitat area (hectares):	N/A	Irreplaceable habitat area off-site (hectares):	N/A

Main menu

Results

Cell style conventions

	Attention required
	Input error/rules and principles not met
	Use of this cell is not appropriate
	Enter data
	Automatic lookup
	Result

View all

Reset view

On-site baseline map

Insert

On-site post intervention map

Insert

On-site baseline map reference number

Off-site baseline map

Insert

Off-site post intervention map

Insert

Off-site baseline map reference number

Off-site post-intervention reference number

Key

-  Area habitats
-  Hedgerows and lines of trees
-  Watercourses

The Statutory Biodiversity Metric Main menu

Start page Technical data Results

Tree helper						
Tree size	Number of trees and area (ha) for each condition state					
	Poor	Area	Moderate	Area	Good	Area
Small		0.0000		0.0000		0.0000
Medium		0.0000		0.0000		0.0000
Large		0.0000		0.0000		0.0000
Very large		0.0000		0.0000		0.0000
Total	0	0.0000	0	0.0000	0	0.0000







Start here






On-site baseline

- A-1 On-site Area Habitat Baseline 
- B-1 On-site Hedge Baseline 
- C-1 On-site Watercourse Baseline 







On-site post development

- A-2 On-site Area Habitat Creation 
- A-3 On-site Area Habitat Enhancement 
- B-2 On-site Hedge Creation 
- B-3 On-site Hedge Enhancement 
- C-2 On-site Watercourse Creation 
- C-3 On-site Watercourse Enhancement 

Off-site baseline

- D-1 Off-site Area Habitat Baseline 
- E-1 Off-site Hedge Baseline 
- F-1 Off-site Watercourse Baseline 

Off-site post development

- D-2 Off-site Area Habitat Creation 
- D-3 Off-site Area Habitat Enhancement 
- E-2 Off-site Hedge Creation 
- E-3 Off-site Hedge Enhancement 
- F-2 Off-site Watercourse Creation 
- F-3 Off-site Watercourse Enhancement 

HIGH

Rule 1	Higher surplus is used to offset loss of medium distinctiveness of the same broad habitat category.
Rule 2	Remaining higher surplus is used to offset the loss of the most expensive medium credit tier of A4.
Rule 3	Remaining higher surplus is used to offset the loss of the second most expensive medium credit tier of A2.
Rule 4	Remaining higher surplus is used to offset the loss of the third most expensive medium credit tier A1.
Rule 5	Remaining higher surplus is used to offset losses from low distinctiveness habitats.

MEDIUMLOW

The Statutory Biodiversity Metric Results

Return to start
page

Headline results

Detailed results

Habitat trading
summaries

Off-site
summary

Irreplaceable
habitats summary

Unit shortfall
summary

Headline Results		Return to results menu	
Scroll down for final results ⚴			
On-site baseline	Habitat units	721.09	
	Hedgerow units	81.89	
	Watercourse units	33.73	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	1848.10	
	Hedgerow units	118.61	
	Watercourse units	37.96	
On-site net change (units & percentage)	Habitat units	827.01	114.69%
	Hedgerow units	36.72	44.84%
	Watercourse units	4.24	12.56%

Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	827.01	
	Hedgerow units	36.72	
	Watercourse units	4.24	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	827.01
	Hedgerow units	36.72
	Watercourse units	4.24
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	114.69%
	Hedgerow units	44.84%
	Watercourse units	12.56%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	721.09	793.20	0.00	No additional area habitat units required to meet target ✓
Hedgerow units	10.00%	81.89	90.08	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	33.73	37.10	0.00	No additional watercourse units required to meet target ✓

Trading summary
watercourses

Very High Distinctiveness Summary	
Very High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses: Like for like not satisfied	0.00

High Distinctiveness Summary	
High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses; Like for like not satisfied	0.00

High Distinctiveness Summary	
High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses; Like for like not satisfied	0.00

Medium Distinctiveness Summary		
Medium Distinctiveness Units available to offset Lower Distinctiveness Deficit	1321.92	✓
Medium Distinctiveness Broad Habitat Insects to be offset by trading on	0.00	
Higher Distinctiveness Surplus Units minus Medium Distinctiveness Broad Habitat Deficit	0.00	
Overall Distinctiveness Surplus	1321.92	

Low Distinctiveness Summary		
Low Distinctiveness net change in units	-494.91	▲
Cumulative surplus of units	827.01	▲

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Trading summary area habitats

Trading summary watercourses

Trading Summary

Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Same habitat required =	Yes ✓
High	Like for like or better	Yes ✓
Medium	Same distinctiveness or better habitat required	Yes ✓
Low	Same distinctiveness or better habitat required	Yes ✓
Very Low	Same distinctiveness or better habitat required	Yes ✓

Very High Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project-wide unit change
Species-rich native hedgerow with trees - associated with bank or ditch	0.00	0.00	0.00
	0.00	0.00	0.00

Very High Distinctiveness Summary

Very High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses; Like for like not satisfied	0.00

High Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Species-rich native hedgerow with trees	0.00	0.00	0.00
Species-rich native hedgerow - associated with bank or ditch	0.00	0.00	0.00
Native hedgerow with trees - associated with bank or ditch	5.46	0.00	5.46 ✓
	5.46	0.00	5.46

High Distinctiveness Summary

High Distinctiveness Units available to offset lower distinctiveness deficit	5.46 ✓
High Distinctiveness losses to be offset by trading up	0.00
Higher Distinctiveness surplus units minus any high distinctiveness deficit	0.00

Medium Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Species-rich native hedgerow	0.00	0.00	0.00
Native hedgerow - associated with bank or ditch	14.23	0.00	14.23 ✓
Native hedgerow with trees	15.43	0.00	15.43 ✓
Ecologically valuable line of trees	0.00	0.00	0.00
Ecologically valuable line of trees - associated with bank or ditch	0.00	0.00	0.00
	29.66	0.00	29.66

Medium Distinctiveness Summary

Units available from higher distinctiveness habitats	5.46 ✓
Medium Distinctiveness net change in units	29.66 ✓
Cumulative availability of units	35.12 ✓

Low Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Native hedgerow	1.60	0.00	1.60 ✓
Line of trees	0.00	0.00	0.00
Line of trees - associated with bank or ditch	0.00	0.00	0.00
	1.60	0.00	1.60

Low Distinctiveness Summary

Low Distinctiveness net change in units	1.60 ✓
Cumulative availability of units	36.72 ✓

Very Low Distinctiveness

Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Non-native and ornamental hedgerow	0.00	0.00	0.00
	0.00	0.00	0.00

Very Low Distinctiveness Summary

Very Low Distinctiveness net change in units	0.00
Cumulative availability of units	36.72 ✓

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Trading summary area habitats

Trading summary hedgerows

Trading Summary		
Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Same habitat required – bespoke compensation option A	Yes ✓
High	Same habitat required =	Yes ✓
Medium	Same habitat required =	Yes ✓
Low	Better distinctiveness habitat required	Yes ✓

Very High Distinctiveness			
Habitat group	On-site unit change	Off-site unit change	Project-wide unit change
Priority habitat	0.00	0.00	0.00
	0.00	0.00	0.00

High Distinctiveness			
Habitat group	On-site unit change	Off-site unit change	Project-wide unit change
Other rivers and streams	0.00	0.00	0.00
	0.00	0.00	0.00

Medium Distinctiveness			
Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Ditches	4.24	0.00	4.24 ✓
Canals	0.00	0.00	0.00
	4.24	0.00	4.24

Low Distinctiveness			
Habitat group	On-site unit change	Off-site unit change	Project wide unit change
Culvert	0.00	0.00	0.00
	0.00	0.00	0.00

Very High Distinctiveness Summary	
Very High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses; Like for like not satisfied	0.00

High Distinctiveness Summary	
High Distinctiveness Units available to offset lower distinctiveness deficit	0.00
Remaining losses; Like for like not satisfied	0.00

Medium Distinctiveness Summary	
Medium Distinctiveness Units available to offset Lower Distinctiveness Deficit	4.24 ✓
Remaining losses; Like for like not satisfied	0.00

Low Distinctiveness Summary	
Low Distinctiveness net change in units	0.00
Cumulative availability of units	4.24 ✓

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● For further information please refer to the irreplaceable habitats section of the metric user guide. This sheet is autopopulated from the A1 on-site habitat baseline tab, with the exception of irreplaceable habitat name.

Irreplaceable habitat area including individual trees, green walls and intertidal hard structures:

Total irreplaceable habitat area excluding individual trees, green walls and intertidal hard structures:

0.00
<hr/>
0.00

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● For further information please refer to the irreplaceable habitats section of the metric user guide. This sheet is autopopulated from the D1 off-site habitat baseline tab, with the exception of irreplaceable habitat name

Irreplaceable habitat area including individual trees, green walls and intertidal hard structures:

Total irreplaceable habitat area excluding individual trees, Green walls and intertidal hard structures:

0.00
<hr/>
0.00

Site Area (Including area of individual trees, grass fields, water/land adjacent)	500.00						
DP is landowner responsible for:	<table border="1"> <tr> <td>DP</td> <td>Landowner</td> <td>DP</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	DP	Landowner	DP			
DP	Landowner	DP					

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Classification categories	
Classification Category	Classification Measurement
1. General	1.1
2. Specific	2.1
3. Detailed	3.1
4. Comprehensive	4.1
5. In-depth	5.1
6. Extensive	6.1
7. Exhaustive	7.1
8. Comprehensive	8.1
9. Detailed	9.1
10. Specific	10.1
11. General	11.1
12. Comprehensive	12.1
13. Detailed	13.1
14. Specific	14.1
15. General	15.1
16. Comprehensive	16.1
17. Detailed	17.1
18. Specific	18.1
19. General	19.1
20. Comprehensive	20.1
21. Detailed	21.1
22. Specific	22.1
23. General	23.1
24. Comprehensive	24.1
25. Detailed	25.1
26. Specific	26.1
27. General	27.1
28. Comprehensive	28.1
29. Detailed	29.1
30. Specific	30.1
31. General	31.1
32. Comprehensive	32.1
33. Detailed	33.1
34. Specific	34.1
35. General	35.1
36. Comprehensive	36.1
37. Detailed	37.1
38. Specific	38.1
39. General	39.1
40. Comprehensive	40.1
41. Detailed	41.1
42. Specific	42.1
43. General	43.1
44. Comprehensive	44.1
45. Detailed	45.1
46. Specific	46.1
47. General	47.1
48. Comprehensive	48.1
49. Detailed	49.1
50. Specific	50.1
51. General	51.1
52. Comprehensive	52.1
53. Detailed	53.1
54. Specific	54.1
55. General	55.1
56. Comprehensive	56.1
57. Detailed	57.1
58. Specific	58.1
59. General	59.1
60. Comprehensive	60.1
61. Detailed	61.1
62. Specific	62.1
63. General	63.1
64. Comprehensive	64.1
65. Detailed	65.1
66. Specific	66.1
67. General	67.1
68. Comprehensive	68.1
69. Detailed	69.1
70. Specific	70.1
71. General	71.1
72. Comprehensive	72.1
73. Detailed	73.1
74. Specific	74.1
75. General	75.1
76. Comprehensive	76.1
77. Detailed	77.1
78. Specific	78.1
79. General	79.1
80. Comprehensive	80.1
81. Detailed	81.1
82. Specific	82.1
83. General	83.1
84. Comprehensive	84.1
85. Detailed	85.1
86. Specific	86.1
87. General	87.1
88. Comprehensive	88.1
89. Detailed	89.1
90. Specific	90.1
91. General	91.1
92. Comprehensive	92.1
93. Detailed	93.1
94. Specific	94.1
95. General	95.1
96. Comprehensive	96.1
97. Detailed	97.1
98. Specific	98.1
99. General	99.1
100. Comprehensive	100.1
101. Detailed	101.1
102. Specific	102.1
103. General	103.1
104. Comprehensive	104.1
105. Detailed	105.1
106. Specific	106.1
107. General	107.1
108. Comprehensive	108.1
109. Detailed	109.1
110. Specific	110.1
111. General	111.1
112. Comprehensive	112.1
113. Detailed	113.1
114. Specific	114.1
115. General	115.1
116. Comprehensive	116.1
117. Detailed	117.1
118. Specific	118.1
119. General	119.1
120. Comprehensive	120.1
121. Detailed	121.1
122. Specific	122.1
123. General	123.1
124. Comprehensive	124.1
125. Detailed	125.1
126. Specific	126.1
127. General	127.1
128. Comprehensive	128.1
129. Detailed	129.1
130. Specific	130.1
131. General	131.1
132. Comprehensive	132.1
133. Detailed	133.1
134. Specific	134.1
135. General	135.1
136. Comprehensive	136.1
137. Detailed	137.1
138. Specific	138.1
139. General	139.1
140. Comprehensive	140.1
141. Detailed	141.1
142. Specific	142.1
143. General	143.1
144. Comprehensive	144.1
145. Detailed	145.1
146. Specific	146.1
147. General	14

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The Statutory Biodiversity Metric Technical Data

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