Eastern Green Link 4:

Scottish Onshore Scheme

Volume 4: Appendices

Appendix 7.7 BNG Assessment

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Tables

1. Introduction

AECOM was commissioned by SP Energy Networks to undertake a Biodiversity Net Gain (BNG) assessment for the converter station element of Eastern Green Link 4 (EGL4) Scottish Onshore Scheme (**Figure 1 Baseline Habitat Plan, Annex A Figures**). The Scottish Onshore Scheme includes the creation of a new converter station immediately east of the existing 275 kV / proposed extended new 400 kV Westfield Substation and is located approximately 110 m northwest of Auchterderran, Fife (Central Ordnance Survey National Grid Reference NT 19877 97279). Further details of the Scottish Onshore Scheme can be found within **Chapter 2 Project Description (Volume 2 Main Report)**. The cable route was not included within the BNG assessment as the works are considered to be temporary, do not impact a priority habitat and are considered unlikely to impact its biodiversity value, with all land reinstated to its former condition post-construction.

For the purpose of this report, the 'Site' refers to habitats within the BNG boundary identified as shown in **Figure 1 Baseline Habitat Plan, Annex A Figures**. In line with good practice and SP Energy Networks policy, only habitats that will be permanently impacted (i.e. that will not return to target condition within two years of initial impact) are included within this BNG assessment. Habitats that fall under this description, are illustrated in **Figure 6.6 Outline Landscape Plan** within **Chapter 6 Landscape and Visual Amenity (Volume 2 Main Report)** as 'habitats excluded from assessment' within **Figure 1 Baseline Habitat Plan** and **Figure 2 Post-Development Habitat Plan** within **Annex A Figures.**

The assessment compares the Site's baseline habitat value with the predicted post-development habitat value, following the mitigation hierarchy (avoid–minimise–restore–offset). Biodiversity units have been quantified using the Scottish and Southern Electricity Networks (SSEN) Biodiversity Toolkit[1] (hereafter, the 'Biodiversity Toolkit'), which adapts Natural England's Biodiversity Metric 3.1[2] for Scottish use. As Scottish-specific condition criteria are not yet available, Natural England habitat condition sheets are used as a proxy in line with NatureScot interim guidance[3].

SP Energy Networks aims to deliver measurable biodiversity improvements, the assessment is undertaken against the Applicant's internal 10% BNG target as set out in its Environmental Action Plan[4].

1.1 Site Description

The Site, indicated by the red line boundary on **Figure 1 Baseline Habitat Plan, Annex A Figures,** consists of improved grassland with small areas of woodland, scrub and neutral grassland with hedgerow boundaries. A hardstanding access track is present within the east of the Site.

[1] Scottish and Southern Electricity Networks (SSEN), 2024. *SSEN Biodiversity Toolkit.*
[2] Natural England (2022). *Biodiversity Metric 3.1: Habitat Condition Assessment Sheets.*
[3] NatureScot (2023/2024). *Interim advice on using Natural England Biodiversity Metric 3.1 habitat condition sheets in Scotland.*
[4] SP Energy Networks (2024). *Environmental Action Plan – RIIO-T3 Business Plan (Redacted).*

Two ditches are present in the west of the Site. As the Scottish Onshore Scheme does not impact any watercourses, these habitats are considered retained and have been excluded from the BNG assessment.

The Site is adjacent to the existing Westfield 275 kV substation to the northwest, arable fields to the west, and arable fields and woodland to the north and south. The B9097 road runs adjacent to the north of the Site.

1.2 The Scottish Onshore Scheme

The Scottish Onshore Scheme, as illustrated on **Figure 2 Post-Development Habitat Plan**, **Annex A Figures**, includes the creation of a proposed convertor station which will consist of fenced hardstanding and buildings within the operational area.

Proposed landscaping includes the creation of scrub, neutral grassland, woodland, hedgerows and bioswale with enhancements to woodland and hedgerows. The design for the landscape was developed through discussions between the landscape team and the ecology team with the aim of maximising biodiversity.

1.3 Policy and Legislation

National Planning Framework 4[5] (NPF4) requires biodiversity enhancements be provided in addition to any proposed mitigation stating that *"Development proposals for national or major development that require an Environmental Impact Assessment will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks, so that they are in a demonstrably better state than without intervention. This will include future management. To inform this, best practice assessment methods should be used." (Policy 3b).* By implementing measures to achieve net gain, the Scottish Onshore Scheme will achieve compliance with this aspect of NPF4, and this BNG assessment provides details of how this will be achieved. This is aligned to the Scottish Government's NPF4 Policy 3 for proposed developments to contribute to biodiversity enhancement.

2. Methods

2.1 Biodiversity Toolkit

The biodiversity baseline and post-development habitat value has been quantified using the industry standard SSEN Biodiversity Toolkit[1] and SSEN Toolkit User Guide[6]. A BNG assessment involves making a comparison between the biodiversity value of habitats present within the Site prior to development (i.e., the 'baseline') and the predicted biodiversity value of habitats following the completion of the development (i.e., 'post-development'). The comparison is made in terms of 'biodiversity units', with a 'Biodiversity Toolkit' providing the mechanism to allow biodiversity values to be calculated and compared.

[5] Scottish Government (2023). National Planning Framework 4
[6] Scottish and Southern Energy (SSE) Renewables, 2024. *Biodiversity Net Gain Toolkit User Guide v2.2.*

The Biodiversity Toolkit[1] assesses distinctiveness (habitat type/value), condition, extent, connectivity, and strategic significance (SS) for baseline and post-development habitats. A net gain is achieved where the post-development unit score exceeds the baseline.

For post-development calculations, the Toolkit applies standard risk multipliers to reflect delivery risk, time to target condition, and the location of mitigation relative to losses. These multipliers reduce the value of created/restored habitats, meaning larger areas and/or higher-value habitats are required to offset losses and deliver net gain.

This BNG Assessment and associated recommendations are based on findings of the Phase 1 habitat survey[7] and Statutory Metric Habitat Condition Assessment (HCA)[8] surveys undertaken in September and October 2024. For this assessment, the Biodiversity Toolkit has been completed in Phase 1[7] habitat classification system.

2.2 Strategic Significance

Strategic Significance (SS) is the local significance of a habitat based on its location. As per the Biodiversity Toolkit guidance all baseline and post-development habitats have been assigned a SS rating depending on "*if the habitat or area is included within any local plans, policies or strategies, or is ecologically valuable*"[6].

2.3 Connectivity

A connectivity rating has been assigned to all baseline habitats as per the Toolkit User Guide[6] with all 'High' and 'Very high' distinctiveness habitats assigned a 'Medium' connectivity rating, and all other habitats assigned a 'Low' connectivity rating.

2.4 Post-Development

To calculate the Post-development value, the difficulty and time to target condition to create or enhance habitats follows the values given in Metric 3.1. Six years has been added these timescales to account for the construction period.

2.5 Assumptions

In undertaking the calculation, the following assumptions have been made based on the SSEN Toolkit User Guide[9] and industry standard methodologies:

- Temporary impacts restored to target condition within ≤2 years are excluded from the calculation; all other temporary and all permanent changes to vegetation within the boundary are included.
- As watercourses are not adversely directly or indirectly impacted by the converter station, they are considered retained and have not been included within this BNG assessment.
- Due to design changes, habitat condition assessments were not undertaken within an area of marshy grassland to the northwest of the Site. These areas were assigned 'Moderate' condition as a precaution, following industry standard guidance.

[7] Joint Nature Conservation Committee (JNCC) (2010) Handbook for Phase 1 habitat survey. Available Online at: Handbook for Phase 1 habitat survey
[8] DEFRA, 2025. Statutory Biodiversity Metric Condition Assessments. Available Online at: Statutory Biodiversity Metric Condition Assessments.
[9] Scottish and Southern Energy (SSE) Renewables, 2024. *Biodiversity Net Gain Toolkit User Guide v2.2.*

Furthermore, a desk-based assessment concluded that this section of habitat could be extrapolated to the adjacent fields added to the assessment boundary as part of the design changes.

- All baseline habitat areas/lengths have been calculated in ESRI ArcGIS from the digitised features of the baseline habitat map. Where habitat boundaries coincided with discernible boundaries on aerial imagery available at the time of survey, accuracy is as determined by the accuracy and clarity of the aerial imagery. Otherwise, habitat boundaries are as estimated in the field. Note also that habitats often grade into each other without a sharp boundary, and in these cases best placement of the boundary has been estimated. For these reasons, baseline habitat areas/lengths are approximations only;
- Calculations involving habitat areas/lengths are rounded to two decimal places in the Toolkit, therefore the calculations are to that level of accuracy; and
- Baseline habitats and conditions may change with further elapsed time since the field surveys informing this BNG assessment were completed. However, it is unlikely given the current ownership and management of the Site, and the nature of habitat present, that there would be significant changes to baseline habitats for several years at least. Any material changes to baseline habitats are very unlikley between field surveys undertaken and the anticipated commencement of construction.
- Within the toolkit, the distinctiveness value assigned to neutral grassland, is High. To avoid overvalue of this habitat, and in line with the values within Metric 3.1, a proxy habitat has been entered into the toolkit, which has the correct distinctiveness value, as medium (in this instance, bracken has been used – where this has been entered, this is detailed within the notes section of the toolkit).

3. Results

3.1 Baseline Habitats

The Site covers a total area of 38.85 ha. Refer to **Figure 1 Baseline Habitat Plan, Annex A Figures.**

Baseline habitats consist mainly of improved grassland fields, with areas of woodland, scrub and neutral grassland with hedgerow boundaries.

An overview of the baseline biodiversity for the Scottish Onshore Scheme is summarised in **Annex C Biodiversity Toolkit Outputs**.

3.1.1 Baseline Habitats – Strategic Significance

A SS rating has been assigned to all baseline habitats as per the Toolkit User Guide[6]. Information was obtained from the Fife Biodiversity Action Plan (LBAP)[10] to assess the SS rating.

[10] Fife Council, 2013. Fife Local Biodiversity Action Plan. Available at: https://www.fife.gov.uk/__data/assets/pdf_file/0024/191175/FifeLBAP_4thEd.pdf

Table 3-1 **Strategic Significance Justification** summarises the SS rating assigned to each habitat type.

Table 3-1: Strategic Significance Justification

Strategic Significance	Justification Reasoning
High	The following habitats have been identified as local priority habitats within the Fife LBAP[10]: • Hedgerows
Medium	The following habitats have not been identified within the Fife LBAP[10] but have a level of intrinsic ecological value: • Grassland – Other neutral grassland • Woodland and forest – Other woodland; broadleaved • Woodland and forest – Other woodland; mixed
Low	The following habitat has not been formally identified as a local priority habitat and is not considered ecologically desirable: • Grassland – Modified grassland • Urban – Developed land; sealed surface

3.2 Post-Development Habitats

Post-development habitats have been assigned as per **Figure 6.6 Outline Landscape Plan** within **Chapter 6 Landscape and Visual Amenity (Volume 2 Main Report)** and are shown on **Figure 2 Post-Development Habitat Plan** within **Annex A Figures.**

With respect to the Post-development habitats, an area of improved grassland will be lost to allow for the creation of a convertor station with a hardstanding forecourt and associated buildings.

Around the convertor station, landscaping is proposed, which includes the creation of scrub, neutral grassland, woodland, hedgerows and bioswale with enhancements to woodland and hedgerows. This habitat creation provides a richer biodiversity landscape, than is currently present, providing a more diverse mix of habitats. The change from modified grassland to neutral grassland using species-rich grassland seed mixes, with a wider range of native species will provide benefits for pollinators, with the woodland and scrub habitats providing connectivity through the landscape and over time will likely provide benefits to nesting birds and bats.

A Landscape Environmental Management Plan (LEMP) is to be produced and approved post-submission and will detail ways to achieve woodland enhancement from 'Poor' to 'Moderate' condition. This may include thinning and phased planting to increase age-class diversity, fencing to reduce sheep grazing, targeted native planting to improve species diversity, and/or the retainment of standing and fallen dead trees. The LEMP will also detail enhancement to hedgerows including the filling of gaps with native hedgerow and tree planting.

The LEMP will detail the management and monitoring required for habitats, to ensure successful establishment and achievement of target condition.

All habitats that are due to be created and enhanced within the Scottish Onshore Scheme are detailed in **Annex C Biodiversity Toolkit Outputs**.

3.2.1 Post-Development Habitats – Strategic Significance

A SS rating has been assigned to all post-development habitats as per the Toolkit User Guide[6].

Table 3-2: Strategic Significance Justification

Strategic Significance	Justification Reasoning
High	The following habitats have been identified as local priority habitats within the Fife LBAP[10]: • Hedgerows
Medium	The following habitats have not been identified within the Fife LBAP[10] but have ecological value: • Grassland – Other neutral grassland • Woodland and forest – Other woodland; broadleaved • Woodland and forest – Other woodland; mixed
Low	The following habitat has not been formally identified as a local priority habitat and is not considered ecologically desirable: • Grassland – Modified grassland • Urban – Developed land; sealed surface • Urban - Bioswale

3.3 Summary of Results

The Scottish Onshore Scheme is predicted to result in a net gain of 66 % for area habitat units and 422 % for hedgerow habitat units as detailed in **Table 3-3 Summary of Results.**

Table 3-3: Summary of Results

Habitat Type	Baseline	Post-Development	Total Net Unit Change	Total Net % Change
Area	95.61	158.67	+63.06	66%
Hedgerow	4.07	21.24	+17.17	422%

4. Conclusion

The Scottish Onshore Scheme is predicted to result in a 66% net gain of area habitat units and a net gain of 422% hedgerow units. It therefore meets the internal SP Energy Networks target of +10% BNG.

The outputs of the toolkit depend on all enhanced and created habitats meeting the target conditions, subject to the criteria outlined within the SSEN Toolkit User Guide[6]. SP Energy Networks are committed to managing the proposed habitat creation to ensure it that the habitats successfully establish and reach their targeted condition. A LEMP will be produced and approved post planning consent, which will set out details of the proposed habitat management.

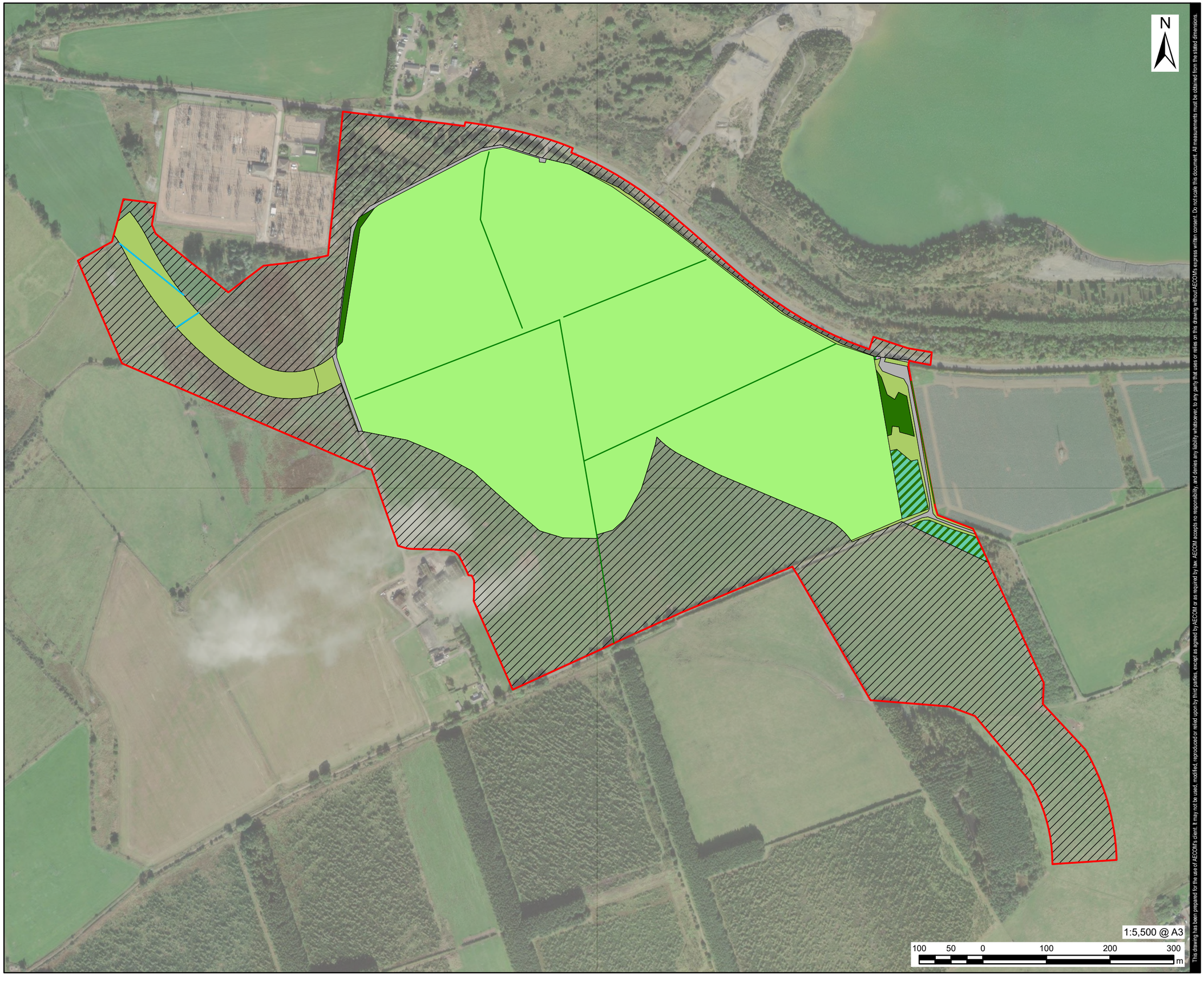
The level of gain achieved, demonstrates that the Scottish Onshore Scheme provides a significant biodiversity enhancement and therefore meets with the requirements of Policy 3b of NPF4.

Annex A Figures

A.1 Baseline Habitat Plan

Revision: 1 Drawn: ER Checked: AM Approved: DR Date: 2025-11-13

Filename: \\eu.aecomnet.com\euprojectvol\UKNCL2-IE\Environmental Group Management\GIS Management\SPEN OTNR\02_Maps\Eastern Link 4\BNG\EGL4_BNG_Habitat_Plans.aprx



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LEGEND

- Biodiversity Net Gain Assessment Boundary
- Habitats Excluded from Assessment

Baseline UK Habitat Type

- Ditches
- Native hedgerow
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Mixed scrub
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved
- Woodland and forest - Other woodland; mixed

NOTES

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ISSUE PURPOSE

BNG ASSESSMENT

PROJECT NUMBER

60707131

FIGURE TITLE

Biodiversity Net Gain Assessment - Baseline Habitats Plan

FIGURE NUMBER

Appendix A

A.2 Post-Development Habitat Plan

Revision: 1 Drawn: ER Checked: AM Approved: DR Date: 2025-11-13

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LEGEND

- Biodiversity Net Gain Assessment Boundary
- Habitats Excluded from Assessment

Post Development UK Habitat Type

- Ditches
- Species-rich native hedgerow
- Species-rich native hedgerow with trees
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Mixed scrub
- Urban - Bioswale
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved
- Woodland and forest - Other woodland; mixed

NOTES

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ISSUE PURPOSE

BNG ASSESSMENT

PROJECT NUMBER

60707131

FIGURE TITLE

Biodiversity Net Gain Assessment - Post-Development Habitats Plan

FIGURE NUMBER

Appendix B

Annex B Habitat Condition Assessments

A.3 Baseline Habitat Condition Assessment

Broad Habitat	Habitat Type	Condition Sheet	Condition Sheet Criteria												Score	Condition
			A / A1	B / A2	C / B1	D / B2	E / C1	F / C2	G / D1	H / D2	I / E1	J / E2	K	L	M	
Woodland and forest	Other woodland; broadleaved	24. Woodland	1	2	3	2	2	1	1	3	1	1	1	1	2	21	Poor
Grassland	Modified grassland	5. Grassland Low	F	F	P	P	F	P	P							3	Poor
Native hedgerow		8. Hedgerow	P	F	P	P	F	F	P	P						5	Moderate

Annex C Biodiversity Toolkit Outputs

Table C-1: Baseline area habitat units

Habitat Type	Area (Ha)	Distinctiveness	Condition	Connectivity	SS	Habitat Units
Grassland - Modified grassland	1.23	Low	Poor	Low	Low	2.46
Grassland - Modified grassland	15.83	Low	Poor	Low	Low	31.66
Grassland - Modified grassland	0.91	Low	Poor	Low	Low	1.82
Grassland - Modified grassland	3.47	Low	Poor	Low	Low	6.94
Grassland - Modified grassland	3.55	Low	Poor	Low	Low	7.10
Grassland - Modified grassland	0.51	Low	Poor	Low	Low	1.02
Grassland - Modified grassland	9.04	Low	Poor	Low	Low	18.08
Grassland – Other neutral grassland	1.11	Medium	Moderate	Moderate	Medium	10.74
Grassland – Other neutral grassland	1.00	Medium	Poor	Moderate	Medium	4.84
Urban - Developed land; sealed surface	0.24	Very Low	N/A - No biodiversity value	Low	Low	0.00
Urban - Developed land; sealed surface	0.02	Very Low	N/A - No biodiversity value	Low	Low	0.00
Urban - Developed land; sealed surface	0.24	Very Low	N/A - No biodiversity value	Low	Low	0.00
Woodland and forest - Other woodland; broadleaved	0.06	Medium	Moderate	Low	Medium	0.53

Habitat Type	Area (Ha)	Distinctiveness	Condition	Connectivity	SS	Habitat Units
Woodland and forest - Other woodland; broadleaved	0.26	Medium	Poor	Low	Medium	1.14
Woodland and forest - Other woodland; mixed	0.65	Medium	Poor	Low	Medium	2.86
Grassland – Other neutral grassland	0.54	Medium	Moderate	Moderate	Medium	5.23
Woodland and forest - Other woodland; broadleaved	0.01	Medium	Poor	Low	Medium	0.04
Woodland and forest - Other woodland; broadleaved	0.13	Medium	Moderate	Low	Medium	1.14
TOTAL	**38.80**	**-**	**-**	**-**	**-**	**95.61**

Table C-2: Baseline hedgerow habitat units

Habitat Type	Area (km)	Distinctiveness	Condition	Connectivity	SS	Habitat Units
Native Hedgerow	0.17	Low	Poor	Low	High	0.66
Native Hedgerow	0.80	Low	Moderate	Low	High	2.08
TOTAL	**0.97**	**-**	**-**	**-**	**-**	**4.07**

Table C-3: Post-Development Area Habitat Units (Created)

Habitat Type	Area (Ha)	Distinctiveness	Target Condition	Time to Target Condition (yrs)	Connectivity	SS	Habitat Units
Grassland - Modified grassland	1.23	Low	Moderate	10	Low	Low	3.44
Grassland - Bracken	15.83	Medium	Moderate	11	Moderate	Medium	103.59
Heathland and shrub - Mixed scrub	0.91	Low	Poor	7	Low	Low	1.42
Heathland and shrub - Mixed scrub	3.47	Low	Moderate	11	Low	Low	9.38
Woodland and forest - Other woodland; broadleaved	3.55	Medium	Moderate	21	Low	Medium	14.78
Urban - Bioswale	0.51	Low	N/A - No biodiversity value	7	Low	Low	0.00
Urban - Developed land; sealed surface	9.04	Very Low	N/A - No biodiversity value	6	Low	Low	0.00
Grassland - Bracken	1.11	Medium	Moderate	11	Moderate	Medium	7.26
Grassland - Bracken	1.00	Medium	Moderate	11	Moderate	Medium	6.54
Grassland - Bracken	0.24	Medium	Moderate	11	Moderate	Medium	1.57
Heathland and shrub - Mixed scrub	0.02	Low	Moderate	11	Low	Low	0.05
Woodland and forest - Other woodland; broadleaved	0.24	Medium	Moderate	21	Low	Medium	1.00
Urban - Bioswale	0.06	Low	Good	7	Low	Low	0.28
Woodland and forest - Other woodland; broadleaved	0.54	Medium	Moderate	21	Low	Medium	2.25

Habitat Type	Area (Ha)	Distinctiveness	Target Condition	Time to Target Condition (yrs)	Connectivity	SS	Habitat Units
Grassland - Bracken	0.01	Medium	Moderate	11	Low	Medium	0.06
Grassland - Bracken	0.13	Medium	Moderate	11	Low	Medium	0.77
TOTAL	**37.89**	**-**	**-**	**-**	**-**	**-**	**152.40**

Table C-4: Created Hedgerow Habitats

Habitat Type	Area (Ha)	Distinctiveness	Target Condition	Time to Target Condition (yrs)	Connectivity	SS	Habitat Units
Native Species Rich Hedgerow	0.10	Medium	Moderate	11	Low	High	0.62
Native Species Rich Hedgerow with trees	2.65	Medium	Moderate	16	Low	High	13.80
TOTAL	**2.75**	**-**	**-**	**-**	**-**	**-**	**14.42**

Table C-5: Enhanced Area Habitats

Habitat Type	Area (Ha)	Distinctiveness Change	Condition	Time to Target Condition (yrs)	Connectivity Change	SS Change	Habitat Units
Woodland and forest – Other woodland; broadleaved	0.26	N/A	Poor → Moderate	16	N/A	N/A	1.14 → 1.79 = 0.65
Woodland and forest – Other woodland; broadleaved	0.65	N/A	Poor → Moderate	16	N/A	N/A	2.86 → 4.48 = 1.62
TOTAL	**0.91**	**-**	**-**	**-**	**-**	**-**	**4.00 → 6.27 = 2.27**

Table C-6: Enhanced Hedgerow Habitats

Habitat Type Change	Area (Ha)	Distinctiveness Change	Condition Change	Time to Target Condition (yrs)	Connectivity Change	SS Change	Habitat Units Uplift
Native hedgerow → Native species rich hedgerow with trees	0.17	N/A	Poor → Moderate	16	N/A	N/A	0.39 → 1.05 = 0.66
Native hedgerow → Native species rich hedgerow with trees	0.80	N/A	N/A	16	N/A	N/A	3.86 → 5.76 = 1.90
TOTAL	**0.97**	**-**	**-**	**-**	**-**	**-**	**4.25 → 6.81 = 2.56**