



## **Thurrock Flexible Generation Plant**

**Environmental Statement Volume 6  
Appendix 9.3: Biodiversity Net Gain Assessment**

**Date:** June 2021



**Environmental Impact Assessment**

**Environmental Statement**

**Volume 6**

**Appendix 9.3**

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## Summary

This document provides a development-specific Biodiversity Net Gain (BNG) Assessment in accordance with the requirements of the National Planning Policy Framework (NPPF, 2019) and recognised industry guidance (CIEEM et al, 2019) for the proposed Thurrock Flexible Generation Plant.

## Qualifications

This document has been prepared by Louisa Medland CEcol MCIEEM, a Principal Consultant, who has 12 years' experience of environmental impact assessment, and checked and updated by Matthew Fasham CEnv MCIEEM, a Technical Director, with over 20 years' professional experience in consultancy in the UK.

# 1. Introduction

## 1.1 Background

- 1.1.1 A site-specific Biodiversity Net Gain (BNG) Assessment has been prepared for Thurrock Flexible Generation Plant (the proposed development).
- 1.1.2 Volume 3, Chapter 9 of the Environmental Statement provides a full assessment of the effects of the project on ecology and nature conservation and includes the results of ecological surveys previously undertaken on the site and used to provide a baseline for the BNG Assessment.
- 1.1.3 This report provides:
- Results of the on-site assessment of biodiversity value prior to development;
  - Results of the on-site assessment of biodiversity value following development taking into consideration landscaping and habitat creation designed into the project.
  - Results of the overall net gain assessment demonstrating whether net gain of >10% is achieved.
- 1.1.4 A net gain target of 10% is chosen because this is the level of net gain set out in the Environment Bill that is currently going through Parliament. Nationally Significant Infrastructure Projects such as Thurrock Flexible Generation Plant are exempt from the requirement to achieve mandatory net gain, as will be required for other development types when the Environment Bill passes. However, seeking net gain insofar as possible with the goal of achieving around +10% has been voluntarily adopted as a principle guiding the outline design of ecological mitigation and enhancement (see application document A8.7) and illustrative landscaping design (application document A2.9).

## 1.2 Biodiversity Net Gain definition

- 1.2.1 Biodiversity Net Gain is defined in Baker *et al* (2019) as:
- "Development that leaves biodiversity in a better state than before"*
- 1.2.2 The requirement for developments to seek to achieve BNG arises from the National Planning Policy Framework (NPPF) (2019), which states in Para. 170 that:
- "Planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity."*

## 1.3 Methodology

- 1.3.1 There is no single set method for quantifying the assessment of BNG but one method is the use of biodiversity calculators to assess the biodiversity value of habitats pre- and post-development based on habitat type, distinctiveness and condition.
- 1.3.2 A biodiversity index is derived for the baseline and for the proposed development, and BNG is considered to be achieved where an increase in value is delivered (on or offsite), and where habitats of a higher value are not replaced exclusively with habitats of a lower value.
- 1.3.3 Defra made available its beta test update of its BNG assessment tool in July 2019, which was subsequently updated in December 2019. This tool has been used for the updated assessment in this report. The tool and associated documents were downloaded from:  
<http://publications.naturalengland.org.uk/publication/5850908674228224>

## 1.4 Report structure

- 1.4.1 This report has the following structure:
- Section 2 provides the results of the BNG assessment;
  - Section 3 provides a summary of the biodiversity net gain that would be achieved.

## 2. Biodiversity Net Gain Assessment

### 2.1 Baseline

- 2.1.1 The baseline for assessment of BNG used the Phase 1 habitat map for the application site produced for the Preliminary Ecological Appraisal (Volume 6, Appendix 9.1). The extent, distinctiveness and condition of the habitats currently present on site is provided in Table 2.1 and Table 2.2, together with the extent of losses of each habitat type resulting from the proposed development.

Table 2.1: Baseline assessment of biodiversity value (nonlinear habitats)

Habitat type	Approx. area (ha)	Distinctive -ness score	Condition score	Ecological connectivity score	Strategic significance score <sup>1</sup>	Value (biodiversity units) <sup>2</sup>	Area of habitat retained	Area of habitat enhanced	Baseline value of retained habitats	Baseline value of enhanced habitats	Area of habitat lost (ha)	Value of habitats lost	Description
Grassland - Other neutral grassland	10.2849	Medium	Moderate	Low	NILS	82.28		3.6505	0.00	29.20	6.6344	53.08	Zone A Walton Common
Grassland - Modified grassland	0.3727	Low	Poor	Low	NILS	0.75	0.2815	0.0912	0.56	0.18	0	0.00	Zone A improved grassland
Sparsely vegetated land - Ruderal/Ephemeral	0.014	Low	Fairly Poor	Low	NILS	0.04			0.00	0.00	0.014	0.04	Zone A tall ruderal
Lakes - Ditches	0.5507	Medium	Moderate	Low	NILS	4.41	0.1151	0.3724	0.92	2.98	0.0632	0.51	Zone A ditches
Cropland - Cereal crops	4.2717	Low	N/A - Agricultural	N/A	NILS	8.54			0.00	0.00	4.2717	8.54	Zone A arable
Grassland - Other neutral grassland	0.0027	Medium	Moderate	Low	NILS	0.02	0.0027		0.02	0.00	0	0.00	Zone B SI grassland
Lakes - Ditches	0.0378	Medium	Moderate	Low	NILS	0.30	0.0378		0.30	0.00	0	0.00	Zone B ditches
Urban - Developed land; sealed surface	0.6871	V.Low	N/A - Other	N/A	NILS	0.00	0.6871		0.00	0.00	0	0.00	Zone B hard standing
Heathland and shrub - Mixed scrub	0.051	Medium	Moderate	Low	NILS	0.41	0.0384		0.31	0.00	0.0126	0.10	Zone C dense scrub
Sparsely vegetated land - Ruderal/Ephemeral	0.9694	Low	Fairly Poor	Low	NILS	2.91	0.5984		1.80	0.00	0.371	1.11	Zone C tall ruderal
Lakes - Ditches	0.2817	Medium	Moderate	Low	NILS	2.25	0.2817		2.25	0.00	0	0.00	Zone C ditches
Cropland - Cereal crops	18.5642	Low	N/A - Agricultural	N/A	NILS	37.13	11.9861		23.97	0.00	6.5781	13.16	Zone C arable (excludes Zone F4 habitat creation area)
Urban - Artificial unvegetated, unsealed surface	0.5951	V.Low	N/A - Other	N/A	NILS	0.00	0.0139		0.00	0.00	0.5812	0.00	Zone C tracks
Urban - Developed land; sealed surface	0.001	V.Low	N/A - Other	N/A	NILS	0.00	0.001		0.00	0.00	0	0.00	Zone C road
Woodland and forest - Lowland mixed deciduous woodland	0.1383	High	Fairly Good	Medium	NILS	2.28	0.1383		2.28	0.00	0	0.00	Zone D woodland
Heathland and shrub - Mixed scrub	0.098	Medium	Moderate	Low	NILS	0.78			0.00	0.00	0.098	0.78	Zone D dense scrub
Grassland - Modified grassland	1.7882	Low	Poor	Low	NILS	3.58			0.00	0.00	1.7882	3.58	Zone D improved grassland

Habitat type	Approx. area (ha)	Distinctive -ness score	Condition score	Ecological connectivity score	Strategic significance score <sup>1</sup>	Value (biodiversity units) <sup>2</sup>	Area of habitat retained	Area of habitat enhanced	Baseline value of retained habitats	Baseline value of enhanced habitats	Area of habitat lost (ha)	Value of habitats lost	Description
Grassland - Modified grassland	0.0736	Low	Fairly Poor	Low	NILS	0.22			0.00	0.00	0.0736	0.22	Zone D poor semi-improved grassland
Sparsely vegetated land - Ruderal/Ephemeral	0.0327	Low	Fairly Poor	Low	NILS	0.10			0.00	0.00	0.0327	0.10	Zone D tall ruderal
Lakes - Ditches	0.0291	Medium	Moderate	Low	NILS	0.23	0.0291		0.23	0.00	0	0.00	Zone D ditches
Cropland - Cereal crops	3.0419	Low	N/A - Agriculture I	N/A	NILS	6.08	3.0419		6.08	0.00	0	0.00	Zone D arable
Urban - Developed land; sealed surface	0.0498	V.Low	N/A - Other	N/A	NILS	0.00	0.0498		0.00	0.00	0	0.00	Zone D road
Urban - Developed land; sealed surface	0.009	V.Low	N/A - Other	N/A	NILS	0.00			0.00	0.00	0.009	0.00	Zone D building
Urban - Vacant/derelict land/ bareground	0.02	Low	Poor	N/A	NILS	0.04			0.00	0.00	0.02	0.04	Zone D bare ground
Heathland and shrub - Mixed scrub	0.1025	Medium	Moderate	Low	NILS	0.82	0.0878		0.70	0.00	0.0147	0.12	Zone E dense scrub
Grassland - Modified grassland	1.2479	Low	Fairly Poor	Low	NILS	3.74	1.1843	0.01	3.55	0.03	0.0536	0.16	Zone E improved grassland
Cropland - Cereal crops	10.2734	Low	N/A - Agriculture I	N/A	NILS	20.55			0.00	0.00	10.2734	20.55	Zone E arable land
Lakes - Ditches	0.0017	Medium	Moderate	Low	NILS	0.01	0.0017		0.01	0.00	0	0.00	Zone E ditch
Heathland and shrub - Mixed scrub	0.0021	Medium	Moderate	Low	NILS	0.02	0.0021		0.02	0.00	0	0.00	Zone F1 scrub
Grassland - Modified grassland	0.2358	Low	Poor	Low	NILS	0.47	0.2358		0.47	0.00	0	0.00	Zone F1 improved grassland
Lakes - Ditches	0.0239	Medium	Moderate	Low	NILS	0.19	0.0239		0.19	0.00	0	0.00	Zone F1 ditches
Cropland - Cereal crops	1.9351	Low	N/A - Agriculture I	N/A	NILS	3.87	0.7063		1.41	0.00	1.2288	2.46	Zone F1 arable
Wetland - Reedbeds	0.0004	High	Moderate	Medium	NILS	0.01	0.0004		0.01	0.00	0	0.00	Zone F1 reeds
Cropland - Cereal crops	4.9807	Low	N/A - Agriculture I	N/A	NILS	9.96			0.00	0.00	4.9807	9.96	Zone F2 arable

Habitat type	Approx. area (ha)	Distinctive -ness score	Condition score	Ecological connectivity score	Strategic significance score <sup>1</sup>	Value (biodiversity units) <sup>2</sup>	Area of habitat retained	Area of habitat enhanced	Baseline value of retained habitats	Baseline value of enhanced habitats	Area of habitat lost (ha)	Value of habitats lost	Description
Lakes - Ditches	0.0006	Medium	Moderate	Low	NILS	0.00	0.0006		0.00	0.00	0	0.00	Zone F2 ditch
Woodland and forest - Lowland mixed deciduous woodland	0.0357	High	Fairly Good	Medium	NILS	0.59	0.0357		0.59	0.00	0	0.00	Zone F3 trees
Heathland and shrub - Mixed scrub	0.0486	Medium	Moderate	Low	NILS	0.39	0.0471	0.0014	0.38	0.01	1E-04	0.00	Zone F3 scrub
Sparsely vegetated land - Ruderal/Ephemeral	0.0099	Low	Fairly Poor	Low	NILS	0.03			0.00	0.00	0.0099	0.03	Zone F3 tall ruderal
Cropland - Cereal crops	0.2596	Low	N/A - Agriculture I	N/A	NILS	0.52			0.00	0.00	0.2596	0.52	Zone F3 arable
Cropland - Cereal crops	3.05	Low	N/A - Agriculture I	N/A	NILS	6.10			0.00	0.00	3.05	6.10	Zone F4 arable
Heathland and shrub - Mixed scrub	0.5909	Medium	Moderate	Low	NILS	4.73			0.00	0.00	0.5909	4.73	Zone G scrub
Grassland - Other neutral grassland	1.6151	Medium	Moderate	Low	NILS	12.92	0.5348		4.28	0.00	1.0803	8.64	Zone G semi-improved grassland
Grassland - Modified grassland	1.0454	Low	Fairly Poor	Low	NILS	3.14			0.00	0.00	1.0454	3.14	Zone G poor semi-improved grassland
Lakes - Ditches	0.0102	Medium	Moderate	Low	NILS	0.08			0.00	0.00	0.0102	0.08	Zone G ditches
Urban - Developed land; sealed surface	0.8041	V.Low	N/A - Other	N/A	NILS	0.00			0.00	0.00	0.8041	0.00	Zone G hard standing
Cropland - Cereal crops	0.6056	Low	N/A - Agriculture I	N/A	NILS	1.21			0.00	0.00	0.6056	1.21	Zone G arable land
Urban - Vacant/derelict land/ bareground	0.6953	Low	Poor	N/A	NILS	1.39			0.00	0.00	0.6953	1.39	Zone G bare ground
Wetland - Reedbeds	0.0757	High	Moderate	Medium	NILS	1.00			0.00	0.00	0.0757	1.00	Zone G reeds
Heathland and shrub - Mixed scrub	0.1306	Medium	Moderate	Low	NILS	1.04			0.00	0.00	0.1306	1.04	Zone H scrub
Grassland - Modified grassland	0.4644	Low	Moderate	Low	NILS	1.86			0.00	0.00	0.4644	1.86	Zone H PSI grassland
Sparsely vegetated land - Ruderal/Ephemeral	0.0886	Low	Fairly Poor	Low	NILS	0.27			0.00	0.00	0.0886	0.27	Zone H tall ruderal



Habitat type	Approx. area (ha)	Distinctive -ness score	Condition score	Ecological connectivity score	Strategic significance score <sup>1</sup>	Value (biodiversity units) <sup>2</sup>	Area of habitat retained	Area of habitat enhanced	Baseline value of retained habitats	Baseline value of enhanced habitats	Area of habitat lost (ha)	Value of habitats lost	Description
Lakes - Ditches	0.034	Medium	Fairly Poor	Low	NILS	0.20			0.00	0.00	0.034	0.20	Zone H ditches
Urban - Developed land; sealed surface	0.2419	V.Low	N/A - Other	Low	NILS	0.00			0.00	0.00	0.2419	0.00	Zone H hardstanding
<b>Total</b>	<b>70.5743</b>					<b>227.47</b>	<b>20.1633</b>	<b>4.1255</b>	<b>50.35</b>	<b>32.41</b>	<b>46.2855</b>	<b>144.71</b>	

1: NILS = Area / compensation not in local strategy / no local strategy

2: Calculated as: area x distinctiveness x condition x connectivity x strategic significance

Table 2.2: Baseline assessment of biodiversity value (linear habitats; hedgerows)

Habitat type	Approx. length (km)	Distinctiveness score	Condition score	Ecological connectivity score	Strategic significance score	Value	Length retained (ha)	Length enhanced (ha)	Baseline value of retained habitats	Baseline value of enhanced habitats	Length of habitat lost (ha)	Value of habitat lost
Line of Trees	0.306	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	1.224	0.002	0.125	0.008	0.5	0.179	0.716
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.457	High	Moderate	Medium	Area/compensation not in local strategy/ no local strategy	6.0324	0.104	0.324	1.3728	4.2768	0.029	0.3828
Native Hedgerow	0.773	Low	Moderate	Low	Area/compensation not in local strategy/ no local strategy	3.092	0.035	0.686	0.14	2.744	0.052	0.208
<b>Total</b>	<b>1.536</b>					<b>10.3484</b>	<b>0.141</b>	<b>1.14</b>	<b>1.52</b>	<b>7.52</b>	<b>0.26</b>	<b>1.3068</b>

## 2.2 Post-development habitats

- 2.2.1 The post-development habitats have been calculated using details of the habitat creation proposed, as shown in the Outline Ecological Management Plan (application document A8.7) and the Illustrative Landscaping Plan (application document A2.9). It should be noted that detailed landscape proposals will be developed further post-consent..
- 2.2.2 Areas of new habitats proposed for the site and the biodiversity value as derived from the Defra calculation tool are provided in Table 2.3 and Table 2.4.
- 2.2.3 Areas of habitats proposed for enhancement and their biodiversity value are provided in Table 2.5 and Table 2.6.
- 2.2.4 The design produces a net gain score of +71.83 area habitat units on site, a gain of 31.58% on the baseline.
- 2.2.5 The design produces a net gain score of +1.29 hedgerow units on site, a gain of 12.44% on the baseline.
- 2.2.6 The net gain target is set at baseline value +10%, which has been achieved for both hedgerow units and area habitat units.
- 2.2.7 The illustrative landscape design has not been finalised within all parts of the site. The BNG calculations will be revisited to confirm the final score when detailed landscaping designs are produced prior to commencement.
- 2.2.8 The principles of ecological mitigation are set out in the Outline Environmental Management Plan (OEMP), and full details of habitat creation, enhancement and management proposals will be formalised via the production of a Landscape and Ecological Management Plan (LEMP) prior to commencement.



Table 2.3: Assessment of post-construction biodiversity value from habitat creation (nonlinear habitats)

Habitat type	Approx. area (ha)	Distinctiveness score	Target Condition score	Ecological connectivity score	Strategic significance score*	Time until target condition achieved (years)	Temporal multiplier	Difficulty of creation or enhancement multiplier	Value of created habitats <sup>1</sup>	Description
Urban - Developed land; sealed surface	0.0085	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Access track ditch crossing: Zone A
Urban - Developed land; sealed surface	0.2854	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	gas compound: Zone A
Urban - Developed land; sealed surface	2.3034	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	gravel compound: Zone A
Urban - Developed land; sealed surface	2.7512	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Plan areas (concrete slab assumed): Zone A
Urban - Developed land; sealed surface	0.8359	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Access track (stone): Zone A
Urban - Developed land; sealed surface	0.561	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Access road: Zone C
Urban - Developed land; sealed surface	0.0261	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Gas pipeline route: Zone C (temporary)
Urban - Developed land; sealed surface	0.3533	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	National Grid gas connection compound and access: Zone D
Urban - Artificial unvegetated, unsealed surface	0.0438	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Footpath link: Zone E
Urban - Developed land; sealed surface	1.0204	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Temporary haul road for construction traffic and abnormal indivisible loads - carriageway: Zone G (removed at project decommissioning)
Urban - Developed land; sealed surface	0.1803	V.Low	N/A - Other	N/A	NILS	0	1.000	1	0.00	Existing hard standing restored: Zone G
					NILS					:
Grassland - Other neutral grassland	0.1415	Medium	Fairly Good	Low	NILS	12	0.652	1	0.92	Ditch protection area: Zone A
Grassland - Other neutral grassland	1.1535	Medium	Fairly Good	Low	NILS	12	0.652	1	7.52	Zone C meadow grassland (adjacent to access road): Zone C
Grassland - Other neutral grassland	9.8915	Medium	Fairly Good	Low	NILS	12	0.652	1	64.50	Meadow grassland - replacement common land on existing arable: Zone E
Grassland - Other neutral grassland	1.1194	Medium	Fairly Good	Low	NILS	12	0.652	1	7.30	Meadow grassland : Zone F1

Habitat type	Approx. area (ha)	Distinctiveness score	Target Condition score	Ecological connectivity score	Strategic significance score*	Time until target condition achieved (years)	Temporal multiplier	Difficulty of creation or enhancement multiplier	Value of created habitats <sup>1</sup>	Description
Grassland - Other neutral grassland	4.1067	Medium	Fairly Good	Low	NILS	12	0.652	1	26.78	Meadow grassland: Zone F2
Grassland - Other neutral grassland	0.1391	Medium	Fairly Good	Low	NILS	12	0.652	1	0.91	Meadow grassland: Zone F3
Grassland - Other neutral grassland	1.656	Medium	Fairly Good	Low	NILS	12	0.652	1	10.80	Meadow grassland: Zone F4
Grassland - Other neutral grassland	0.7759	Medium	Fairly Good	Low	NILS	12	0.652	1	5.06	SI grassland restored along access track/embankment: Zone G
Grassland - Other neutral grassland	0.0264	Medium	Fairly Good	Low	NILS	12	0.652	1	0.17	Meadow grassland access track strips: Zone G (removed at project decommissioning)
Grassland - Other neutral grassland	2.1261	Medium	Good	Low	NILS	15	0.586	1	14.95	Drainage detention / attenuation basin: Zone A
Grassland - Modified grassland	1.5027	Low	Poor	Low	NILS	1	0.965	1	2.90	Main site landscaping: Zone A
Grassland - Modified grassland	0.1154	Low	Fairly Poor	Low	NILS	5	0.837	1	0.29	Reinstated PSI grassland on pipeline route: Zone D
Grassland - Modified grassland	0.9508	Low	Fairly Poor	Low	NILS	5	0.837	1	2.39	Reinstated PSI grassland on access track embankment area: Zone G
Grassland - Modified grassland	1.4349	Low	Poor	Low	NILS	1	0.965	1	2.77	Reinstated IG on gas pipeline route and construction access: Zone D
Heathland and shrub - Mixed scrub	1	Medium	Good	Low	NILS	7	0.779	1	9.35	Zone A scrub planting: Zone A
Heathland and shrub - Mixed scrub	0.6121	Medium	Good	Low	NILS	7	0.779	1	5.72	Zone C scrub planting on bund: Zone C
Heathland and shrub - Mixed scrub	0.098	Medium	Good	Low	NILS	7	0.779	1	0.92	Zone D scrub reinstatement planting: Zone D
Heathland and shrub - Mixed scrub	0.3577	Medium	Good	Low	NILS	7	0.779	1	3.34	Zone E scrub planting on bund: Zone E
Heathland and shrub - Mixed scrub	0.1094	Medium	Good	Low	NILS	7	0.779	1	1.02	Scrub planting: Zone F1
Heathland and shrub - Mixed scrub	0.4134	Medium	Good	Low	NILS	7	0.779	1	3.87	Scrub planting: Zone F2
Heathland and shrub - Mixed scrub	0.1305	Medium	Good	Low	NILS	7	0.779	1	1.22	Scrub planting: Zone F3
Heathland and shrub - Mixed scrub	1.261	Medium	Good	Low	NILS	7	0.779	1	11.79	Scrub planting: Zone F4

Habitat type	Approx. area (ha)	Distinctiveness score	Target Condition score	Ecological connectivity score	Strategic significance score*	Time until target condition achieved (years)	Temporal multiplier	Difficulty of creation or enhancement multiplier	Value of created habitats <sup>1</sup>	Description
Heathland and shrub - Mixed scrub	0.5785	Medium	Good	Low	NILS	7	0.779	1	5.41	Scrub reinstatement planting: Zone G
Cropland - Cereal crops	4.7263	Low	N/A - Agricultural	Low	NILS	1	0.965	1	9.12	Reinstated arable land (gas pipeline and temp works areas): Zone C
Cropland - Cereal crops	0.6056	Low	N/A - Agricultural	Low	NILS	1	0.965	1	1.17	reinstated arable land (access track works area): Zone G
Urban - Artificial unvegetated, unsealed surface	0.4646	V.Low	N/A - Other	Low	NILS	0	1.000	1	0.00	Reinstated tracks: Zone C
Urban - Vacant/derelict land/ bareground	0.02	Low	Poor	Low	NILS	1	0.965	1	0.04	Reinstated bare ground: Zone D
Urban - Vacant/derelict land/ bareground	0.6953	Low	Poor	Low	NILS	1	0.965	1	1.34	Reinstated bare ground: Zone G
Lakes - Ponds (Non-Priority Habitat)	0.133	High	Fairly Good	Medium	NILS	4	0.867	1	1.90	Ponds: Zone F4
Lakes - Ponds (Non-Priority Habitat)	0.1484	High	Fairly Good	Medium	NILS	4	0.867	1	2.12	Ponds: Zone F2
Wetland - Reedbeds	0.1733	High	Fairly Good	Medium	NILS	12	0.652	0.67	1.25	Reedbed: Zone F2
Wetland - Reedbeds	0.0638	High	Fairly Good	Medium	NILS	12	0.652	0.67	0.46	Reedbed reinstatement: Zone G
Lakes - Ditches	0.0284	Medium	Good	Low	NILS	10	0.700	1	0.24	New ditches on main site: Zone A
Lakes - Ditches	0.0484	Medium	Good	Low	NILS	10	0.700	1	0.41	Zone E ditch creation: Zone E
Lakes - Ditches	0.1389	Medium	Good	Low	NILS	10	0.700	1	1.17	Zone F2 ditch creation: Zone F2
Lakes - Ditches	0.0102	Medium	Good	Low	NILS	10	0.700	1	0.09	Zone G ditch restoration: Zone G
Urban - Developed land; sealed surface	0.5186	V.Low	N/A - Other	Low	NILS	0	1.000	1	0.00	Zone H AIL access carriageway: Zone H
Heathland and shrub - Mixed scrub	0.0239	Medium	Moderate	Low	NILS	3	0.899	1	0.17	Zone H replacement scrub planting: Zone H
Urban - Developed land; sealed surface	0.1183	V.Low	N/A - Other	Low	NILS	0	1.000	1	0.00	Zone H hard standing retained: Zone H
Grassland - Modified grassland	0.2496	Low	Moderate	Low	NILS	10	0.700	1	0.70	Zone H PSI replacement: Zone H
Heathland and shrub - Mixed scrub	0.0491	Medium	Moderate	Low	NILS	3	0.899	1	0.35	Zone H scrub replacement: Zone H



Habitat type	Approx. area (ha)	Distinctiveness score	Target Condition score	Ecological connectivity score	Strategic significance score*	Time until target condition achieved (years)	Temporal multiplier	Difficulty of creation or enhancement multiplier	Value of created habitats <sup>1</sup>	Description
<b>Total</b>	<b>46.2855</b>								<b>210.44</b>	

1: Value calculated as: area x distinctiveness x condition x connectivity x time x difficulty)

\* NLS = Area / compensation not in local strategy / no local strategy

**Table 2.4: Assessment of post-construction biodiversity value from habitat creation (linear habitats)**

Habitat type	Approx. length (km)	Distinctiveness score	Target Condition score	Ecological connectivity score	Strategic significance	Time until target condition achieved (years)	Temporal multiplier	Difficulty of creation or enhancement multiplier	Value (area x distinctiveness x condition / time / difficulty)
Native Species-rich hedge	0.15	Medium (4)	Good (3)	Low (1)	Low (1)	10	0.70	0.67	0.84
<b>Total</b>	<b>0.15</b>								<b>0.84</b>

**Table 2.5: Assessment of post-construction biodiversity value from habitat enhancement (nonlinear habitats)**

Baseline habitat	Proposed habitat	Distinctiveness change	Condition change	Area enhanced (ha)	Distinctiveness score	Condition score	Ecological connectivity score	Years to target condition	Difficulty of enhancement category	Habitat units delivered
Grassland - Other neutral grassland	Grassland - Other neutral grassland	Medium - Medium	Moderate - Fairly Good	3.6505	Medium	Fairly Good	Low	10	Low	<b>34.32</b>
Grassland - Modified grassland	Grassland - Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Fairly Good	0.0912	Medium	Fairly Good	Low	12	Low	<b>0.66</b>
Lakes - Ditches	Lakes - Ditches	Medium - Medium	Moderate - Fairly Good	0.3724	Medium	Fairly Good	Low	2	Medium	<b>3.44</b>
Grassland - Modified grassland	Grassland - Other neutral grassland	Low - Medium	Lower Distinctiveness Habitat - Fairly Good	0.01	Medium	Fairly Good	Low	12	Low	<b>0.08</b>
Heathland and shrub - Mixed scrub	Heathland and shrub - Mixed scrub	Medium - Medium	Moderate - Good	0.0014	Medium	Good	Low	3	Low	<b>0.02</b>
<b>Total</b>				<b>4.1255</b>						<b>38.51</b>

Table 2.6: Assessment of post-construction biodiversity value from habitat enhancement (linear habitats)

Baseline habitat	Approx. length (km)	Baseline habitat units	Proposed habitat	Distinctiveness change	Condition change	Area (ha)	Distinctiveness score	Condition score	Ecological connectivity score	Years to target condition	Time to target multiplier	Difficulty of enhancement category	Difficulty of enhancement multiplier	Habitat units delivered
Line of Trees	0.306	1.224	Line of Trees	Low - Low	Moderate - Good	0.125	Low	Good	Low	30	0.343415	Low	1	0.59
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.457	6.0324	Native Species Rich Hedgerow with trees - Associated with bank or ditch	High - High	Moderate - Good	0.324	High	Good	Medium	20	0.490395	Medium	0.67	4.98
Native Hedgerow	0.773	3.092	Native Hedgerow	Low - Low	Moderate - Good	0.686	Low	Good	Low	10	0.700282	Low	1	3.7
<b>Total</b>	<b>1.536</b>	<b>10.3484</b>												<b>9.27</b>



### 3. Summary

3.1.1 A summary screenshot from the calculator tool is provided below.

<b>On-site baseline</b>	<i>Habitat units</i>	<b>227.47</b>
	<i>Hedgerow units</i>	<b>10.35</b>
	<i>River units</i>	<b>0.00</b>
<b>On-site post-intervention</b> (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	<b>299.30</b>
	<i>Hedgerow units</i>	<b>11.64</b>
	<i>River units</i>	<b>0.00</b>
<b>Off-site baseline</b>	<i>Habitat units</i>	<b>0.00</b>
	<i>Hedgerow units</i>	<b>0.00</b>
	<i>River units</i>	<b>0.00</b>
<b>Off-site post-intervention</b> (Including habitat retention, creation, enhancement & succession)	<i>Habitat units</i>	<b>0.00</b>
	<i>Hedgerow units</i>	<b>0.00</b>
	<i>River units</i>	<b>0.00</b>
<b>Total net unit change</b> (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	<b>71.84</b>
	<i>Hedgerow units</i>	<b>1.29</b>
	<i>River units</i>	<b>0.00</b>
<b>Total net % change</b> (including all on-site & off-site habitat creation + retained habitats)	<i>Habitat units</i>	<b>31.58%</b>
	<i>Hedgerow units</i>	<b>12.44%</b>
	<i>River units</i>	<b>0.00%</b>

## 4. References

Baker, J., Hoskins, R. & Butterworth, T. (2019). *Biodiversity Net Gain – good practice principles for development*. Ciria, London.