BIODIVERSITY NET GAIN & HABITAT EVALUATION PROCEDURE ASSESSMENT LAND AT YANEL FARM, NORTH SOMERSET

15th March 2023

Introduction

Soltys Brewster Ecology (SBE) were commissioned by Yanel Farm Solar Limited to undertake a Biodiversity Net Gain (BNG) and Habitat Evaluation Procedure (HEP) Assessment for the proposed solar farm development at Yanel Farm, North Somerset. A Preliminary Ecological Appraisal (PEA) was undertaken at the application site in April 2020 by SBE¹, with an additional site visit undertaken in November 2021². The findings of the PEA and addendum report have been used to inform the on-site baseline habitats included in the BNG and HEP assessments. The PEA survey identified that the proposed site, approx. 65ha in size, mainly comprises of improved grassland, considered to be of low ecological importance. Other habitats present at the site include poor semi-improved grassland, arable field, hedgerows, scattered trees and scrub, ditches and streams.

Habitat Evaluation Procedure

A HEP assessment was also undertaken for the proposed site as per the North Somerset and Mendip Bats SAC: Supplementary Planning Document³. The aim of the assessment was to identify the habitat suitability index (HSI) of the existing habitats for Greater Horseshoe (GHS) and Lesser Horseshoe bats (LHS) and determine the likely development impacts on foraging and commuting bats and extent of replacement habitat required.

The proposed site is located approx. 2.2km from the nearest point of Banwell Ochre Caves Site of Special Scientific Interest (SSSI) and approx. 3.4km from King's Wood and Urchin Wood SSSI. Both of which are components of the North Somerset and Mendip Bats Special Area of Conservation (SAC) and designated for their horseshoe bat populations. The site lies within Bat Consultation Zone Band C, where lower densities of foraging GHS and LHS are expected to occur. However, the site supports areas of grazed pasture and an extensive hedgerow and ditch network which are suitable to support foraging GHS bats. The species has a Core Sustenance Zone of 3km, which refers to 'the area surrounding a communal bat

¹ Soltys Brewster Ecology (SBE) (2020) Land at Yanel Farm, North Somerset – Preliminary Ecological Appraisal. Document Ref: E2094901/Doc01 Issue 6. June 2020.

² SBE (2021) Land at Yanel Farm, North Somerset – Ecology Addendum Report. Document Ref: E2094901/Doc03 Issue 3. December 2021.

³ North Somerset Council (2018) North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance of Development: Supplementary Planning Document. Adopted January 2018.

Yanel Farm Solar Ltd Land at Yanel Farm, North Somerset

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roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost^{*}.

The HEP assessment determines the extent of replacement habitat required (total area in hectares) based on the total habitat units of the existing habitats and delivery and temporal risk of replacement habitats. Habitat units are calculated based on the type of habitat suitability index (type of habitat present and current condition) size and bat consultation band. The HEP assessment results for the proposed site are summarised in Table 2.

As per section A5.36 of the SPD document 'where habitat remains unchanged and is retained by the development it is not included in the calculation', <u>hedgerow and ditch habitats were not included in the assessment as these will be retained as part of the final layout design</u>. The baseline HEP assessment included area-based habitats only. The delivery risk to create replacement grassland and woodland habitats was determined to be 'medium' based on the guidance included in Appendix IV of the guidance, with the temporal risk considered to be 10 years. The management/land use categories (e.g., grazed, hay or unmanaged) were determined based on data collected during the Extended Phase 1 Habitat survey and a review of Google Earth^s imagery.

The HEP assessment produced HSI scores ranging from 0.9 to 4 for grassland habitats at the site (between poor – good suitability for GHS bats), with the areas of grazed improved grassland and smaller areas of unmanaged semi-improved grassland achieving the highest HSI scores and 'good' suitability. A plan showing pre-development HEP habitats is included in Appendix I. Overall, the assessment indicated that 13.22 hectares is the total area of replacement habitat required at the site.

<u>As per the proposals included in the Consultation on Biodiversity Net Gain Regulations and</u> Implementation (DEFRA, 2022); 'mitigation and compensation measures for protected species may be counted towards a biodiversity net gain calculation but should not make up all of a development's biodiversity net gain. At least 10% of the gain should be delivered through separate activities which are not required to mitigate and compensate for protected species impacts'. Therefore, the replacement habitats required from the HEP assessment have been separately identified within the subsequent Biodiversity Net Gain metric.

- ^s <u>https://earth.google.com/web/</u>
- Yanel Farm Solar Ltd
- Land at Yanel Farm, North Somerset

⁴ Bat Conservation Trust (2016) Core Sustenance Zones. Determining Zone Size. Bat Conservation Trust, London. February 2016.

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Biodiversity Net Gain Assessment

A Biodiversity Net Gain (BNG) Assessment was undertaken using the Biodiversity Metric 3.1 Calculation Tool and as per the user guidelines⁶. The calculation of on-site baseline habitat units was undertaken using data collected from the Extended Phase 1 Habitat Survey Plan¹, with on-site created and enhanced habitat units calculated using data collected from the Landscape Plan⁷.

Baseline habitats identified during the Extended Phase 1 Habitat Survey were assigned to their comparable UK Habitat Classification (UKHabs) category, including: g4 modified grassland, g3c other neutral grassland, c1e intensive orchards, w1g other broad-leaved woodlands, h2 hedgerows (e.g., native hedgerows w/ trees or associated banks and ditches) and r2 other rivers and streams (and ditches). Habitat conditions (poor, moderate or good) were assessed using the Biodiversity Metric 3.1 habitat condition assessment sheets. A summary of the condition assessment criteria is included in table 1, with a UK Habitats Classification plan included in Appendix II.

Habitat creation/enhancement features at the site including new native hedgerow and woodland planting and grassland seeding were assigned to the UKHabs categories; w1g other broad-leaved woodland, h2a hedgerows, g4 modified grassland and g3c other neutral grassland (see Table 1). The Landscape and Ecological Management Plan[®] for the scheme indicates that the areas of grassland seeding located beneath the solar arrays, field margins and wildflower areas will be managed to encourage botanical diversity and were assigned moderate condition of medium strategic significance. Once established the grassland areas will be cut once during the summer (between late July – early September) with all arisings removed, to let species flower and set seed. Light mowing will take place over the winter months to manage any regrowth with no cutting following March. The areas of grass seeding between the solar arrays will be cut as required for maintenance and access.

The final BNG Metric assessment, attached with this report, indicates that the scheme will achieve a <u>net</u> gain of 35.42% for habitat units* and a net gain of 38.80% for hedgerow units.

*This figure excludes the enhancement of 13.22ha of modified grassland to neutral grassland, which have been designed as mitigation foraging/commuting habitats for Greater Horseshoe Bats, as per the HEP

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⁶ Panks S., White N., Newsome A., Potter J., Heydon M., Mayhew E., Alvarez M., Russell T., Scott S. J., Heaver M., Scott S. H., Treweek J., Butcher B. & Stone D. (2022) *Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide*. Natural England.

⁷ BayWa r.e. (2022) Yanel Solar Farm – Landscape Plan. Drawing Ref: BWre/031/001. Dated: 01 February 2022.

^a SBE (2020) Land at Yanel Farm, North Somerset – Landscape and Ecological Management Plan (LEMP). Document Ref: E2094901/Doc02 Issue 5. December 2020.

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assessment. In combination with the enhancement measures for the HEP assessment the scheme achieves a score of 93.77%.

Baseline Habitat	Distinctiveness	Condition (at target condition)	Strategic Significance	Condition Assessment Criteria
g4 modified grassland	Low	Poor	Low	Passes criteria 2,4,5,6 and 7, failing essential criterion 1 (<9 species per m ²) Condition Sheet 5
gc3 other neutral grassland	Medium	Poor	Low	Passes criteria 2,3,4, and 5, failing essential criterion 1 and 6 Condition Sheet 6 (<9 species per m ²)
c1e intensive orchards	Low	N/A	Low	N/A
wg1 other woodland; broad-leaved	Medium	Poor	Medium	Condition Assessment score of 26 Condition Sheet 24 Assigned medium strategic significance as shares characteristics with habitats of principle importance
h2a hedgerow (priority habitat)	Medium - High	Poor - Moderate	Medium	Defunct hedgerows assigned poor condition – fails more than 4 attributes. Intact species-rich hedgerows assigned moderate condition – fails no more than 4 attributes. Condition Sheet 8 Assigned medium strategic significance as shares characteristics with habitats of principle importance
r2b.191 other rivers and	Medium	Poor	Low	Passes criteria 3 and 7 out of 8
streams, ditch				Condition Sheet 4
Created Habitats				
g4 modified grassland	Low	Moderate	Low	Passes criteria 1,2,5 and 6 and 7 Condition Sheet 5 (>9 species per m²)

 Table 1 - Habitat distinctiveness, condition (at target condition) and strategic significance for

 baseline, created and enhanced habitats.

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(Germinal Species-Rich Lawn			1	
· ·				
and Hedgerow and Shaded				
Areas mix)				
wg1 other woodland; broad-leaved	Medium	Moderate	Medium	Condition Assessment score of 27 Condition Sheet 24 Assigned medium strategic significance as shares characteristics with habitats of principle importance
u1b developed land;	V. Low	N/A	Low	
sealed surface				,
u1c artificial unvegetated,	Low	N/A	Low	N/A
unsealed surface				
h2a hedgerow (priority habitat)	Medium	Moderate	Medium	Assigned moderate condition – fails no more than 4 attributes. Condition Sheet 8 Assigned medium strategic significance as shares characteristics with habitats of principle importance
Enhanced Habitats				
g3c other neutral grassland (Germinal Hedgerow and Shaded Areas and MG9 Lowland Meadows mix)	Medium	Moderate	Medium	Passes criteria 1,2,3,4, and 6 out of 6 Condition Sheet 6 (>9 species per m ²) Assigned medium strategic significance as shares characteristics with habitats of principle importance
g3c other neutral	Medium	Moderate	Medium	Passes criteria 1,2,3,4, and 6 out of
grassland (Germinal MG9 Lowland Meadows mix)				6 Condition Sheet 6 (>9 species per m²) Assigned medium strategic significance as shares characteristics with habitats of principle importance
h2a hedgerow (priority	Medium	Moderate	Medium	Assigned moderate condition – fails
habitat)				no more than 4 attributes.
				Condition Sheet 8 Assigned medium strategic
	1			significance as shares characteristics

		with habitats of principle
		importance

Habitat Creation and Enhancement

As described above the Landscape Plan/LEMP includes details on habitat creation and enhancement at the site post-development to ensure a long-term biodiversity net gain and mitigation for GHS and LHS bats. Overall, this will include:

- Proposed wildflower (WFG8: Hedgerow and Shaded Areas) and grass (WFG20: Species Rich Lawn) seeding beneath and between solar arrays (approx. 36.5ha);
- Proposed wildflower seeding (mixture of WFG8 and RE2: Lowland Meadows MG9 Grassland) at field margins to provide new foraging habitats for GHS bats (approx. 7.78ha);
- Proposed wildflower seeding (RE2: Lowland Meadows MG9 Grassland) to provide new foraging habitats for GHS bats (approx. 5.44ha)
- Proposed wildflower seeding (mixture of WFG8 and RE2: Lowland Meadows MG9 Grassland) at field margins (approx. 11.94ha)
- Proposed wildflower seeding (RE2) and ground-nesting bird habitat (Skylark plots to be provided at a density of 2 per ha) (approx. 0.92ha);
- New species-rich woodland creation around substation (0.55ha/550m²);
- New native species-rich hedgerow creation (approx. 2770m)
- Enhancement of existing hedgerows with additional native tree and shrub planting (approx. 820m);

Impacts to Bats

Based on the final design layout (i.e., retention of linear habitat features including ditches and hedgerows) and new habitat features included within the landscape plan it is not considered that the proposed development will have a detrimental impact to the favourable conservation status of Greater and Lesser Horseshoe bats associated with the North Somerset and Mendip Bat SAC. All hedgerows and rhynes/ditches at the site will be retained, with existing gaps and gates used within the layout. Some temporary minor negative impacts are likely to occur to allow access (e.g., pruning of overhanging trees and minor hedgerow breaches). These actions will be undertaken over the winter period with replacement planting provided within the first available planting window to minimise any short-term impacts to foraging or commuting bats.

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In addition, the landscape layout will provide >2km of new hedgerow planting, as well as in-fill planting within existing defunct hedgerows, which will improve habitat connectivity across the site and provide new foraging habitats for bats. Areas of improved and semi-improved grassland (including approx. 17.5ha of grazed pasture) which will be lost under the design footprint will be replaced with areas of new species-rich grassland seeding, with retained areas enhanced with Lowland Meadow (MG9 Grassland) mixture. The retained field margins and land between the solar arrays will be seeded with a combination of Lowland Meadows (MG9 Grassland) and Hedgerow and Shaded Areas wildflower mixture and will be managed to encourage botanical diversity and a tall sward height within the summer months, which will provide prey resources for GHS and other bat species. As per the HEP assessment, the landscape plan provides mitigation grassland habitat (through the enhancement of existing grassland with species-rich grassland seeding and positive management) of 13.22ha. In addition, the landscape plan also includes additional areas of species-rich grassland seeding, native species-rich hedgerow creation and enhancement and the creation of 0.55ha of native woodland. Once new planting becomes established, the proposals above are likely to provide a long-term beneficial impact for foraging and commuting bats.

Furthermore, the design of the scheme will not include the lighting of any linear habitat features or foraging habitats. The current proposals include the installation of external lighting at the proposed substation and existing transformer, which will only turn on in the event of an emergency or power outage. No impacts to bats are expected to occur as a result of the design of site lighting during the operational stage.

Further Comments

As discussed above, the proposed site does not overlap with any Juvenile Sustenance Zones for LHS and GHS bats and is located within Bat Consultation Band C. The proposals do not include the removal of linear habitat features (excluding temporary disturbance) and the HEP and BNG assessments indicate the scheme will provide a net gain in habitat units and provide replacement LHS/GHS bat habitats. In addition, the final design will only include external lighting at the proposed substation (which will only turn on in the event of an emergency) with the rest of the site remaining unlit. Based on the location of the site and implementation of these avoidance, mitigation and enhancement measures the proposed development is considered unlikely to have a significant adverse impact on the Favourable Conservation Status of bats (particularly Lesser and Greater Horseshoe bats) associated with the North Somerset and Mendip Bats SAC. As such, targeted bat activity surveys would not be required to inform consideration of the used to inform a Habitat Regulations Assessment (Screening) by the local planning authority which they are required to undertake as part of the planning application process (i.e. as the competent authority).

			nary Ditat	M	atrix	Form	ation		ement/Land Use		Density		
Field		IHS		IHS		IHS		IHS			Band		
No.	Habitat	Code	Score	Code	Score	Code	Score	Code	Score	HSI Score	Score	Hectares	Habitat Units
F1	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.29	1.16
F2	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	5.12	4.61
F3	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.54	1.39
F4	Improved grassland; hay and aftermath grazing	GI0	3		0		0	GM3	0.8	2.4	1	0.99	2.38
F5	Improved grassland; hay and aftermath grazing	GI0	3		0		0	GM3	0.8	2.4	1	2.19	5.26
F6	Improved grassland; hay and aftermath grazing	GU0	3		0		0	GM3	0.8	2.4	1	1.14	2.74
F7	Grassland, semi-improved; hay and aftermath grazing	GI0	4		0		0	GM3	0.8	3.2	1	1.22	3.90
F8	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.00	0.90
F9	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.38	1.24
F10	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.78	1.60
F11	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.96	1.76
F12	Grassland, semi-improved; undetermined grassland management	GU0	4		0		0	GM0	1	4	1	6.12	24.48
F13	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.09	0.98
F14	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.10	0.99
F15	Grassland, semi-improved; hay	GU0	4		0		0	GM22	0.3	1.2	1	0.23	0.28
F16	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.00	0.90
F17	Grassland, semi-improved; hay	GU0	4		0		0	GM22	0.3	1.2	1	1.32	1.58
F18	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	0.88	0.79
F19	Grassland, semi-improved; unmanaged	GU0	4		0		0	GM4	1	4	1	0.99	3.96
F20	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.10	0.99
F21	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	3.97	3.57

Table 2: Habitat Evaluation Procedure Assessment for Greater Horseshoe Bat.

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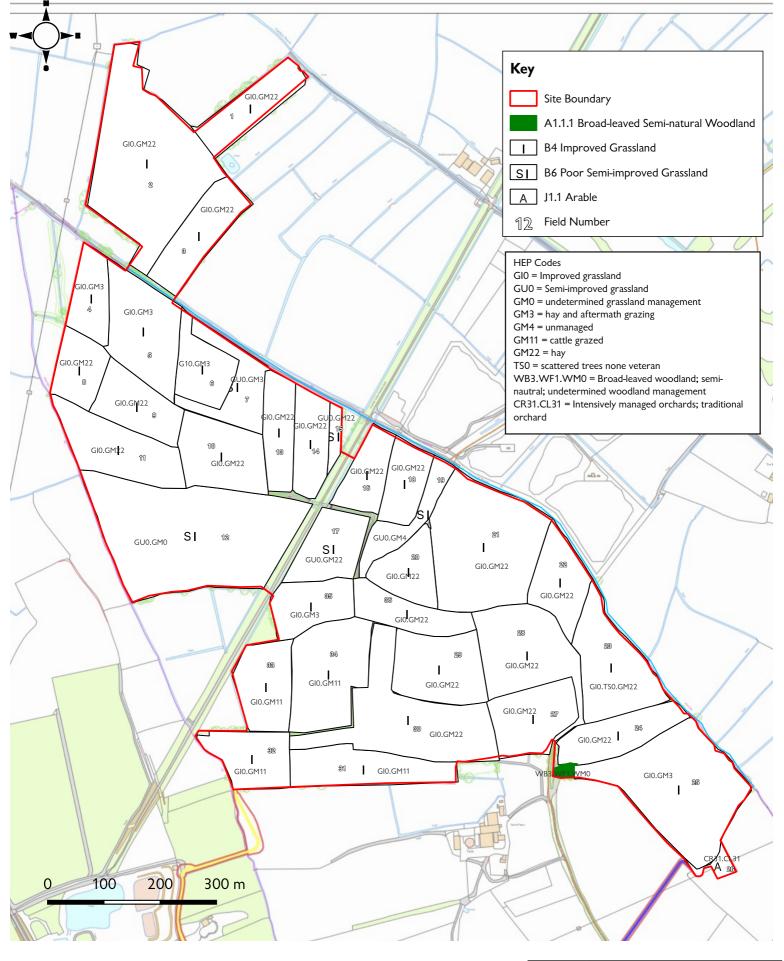
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			nary Ditat	M	atrix	Form	nation		ement/Land Use		Density	Hectares	Habitat Units
Field No.	Habitat	IHS Code	Score	IHS Code	Score	IHS Code	Score	IHS Code	Score	HSI Score	Band Score		
F22	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.33	1.20
F23	Improved grassland; scattered trees none veteran; hay	GI0	3	TSO	0		0	GM22	0.3	0.9	1	2.22	2.00
F24	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.39	1.25
F25	Improved grassland; hay and aftermath grazing	GI0	3		0		0	GM3	0.8	2.4	1	3.96	9.50
F26	Intensively managed orchards; traditional orchard	CR31	1		0		0	CL31	1	1	1	0.18	0.18
F27	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.60	1.44
F28	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	2.56	2.30
F29	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	1.92	1.73
F30	Improved grassland; hay	GI0	3		0		0	GM22	0.3	0.9	1	3.45	3.11
F31	Improved grassland; cattle grazed	GI0	3		0		0	GM11	1	3	1	1.71	5.13
F32	Improved grassland; cattle grazed	GI0	3		0		0	GM11	1	3	1	1.31	3.93
F33	Improved grassland; cattle grazed	GI0	3		0		0	GM11	1	3	1	1.43	4.29
F34	Improved grassland; cattle grazed	GI0	3		0		0	GM11	1	3	1	2.38	7.14
F35	Improved grassland; hay and aftermath grazing	GIO	3		0		0	GM3	0.8	2.4	1	1.20	2.88
F36	Improved grassland; hay	GIO	3		0		0	GM22	0.3	0.9	1	1.15	1.04
W1	Broad-leaved woodland; semi-natural; undetermined woodland management	WB3	6		0	WF1	1	WM0	1	7		0.10	0.70
													113.27
						Hab	oitat requi	red (lowlar woodlar	nd meadows, g nd etc.)	rassland,	Delive	ry risk	1.5
						Hab	oitat requi		nd meadows, g	rassland,		, oral risk	1.4
											Habita	t units	237.8733
											Hectares	required	13.2151833

			nary Ditat	M	atrix	Form	ation	-	ment/Land Use				
Field No.	Habitat	IHS Code	Scor e	IHS Cod e	Score	IHS Code	Score	IHS Code	Score	HSI Score	Density Band Score	Hectares	Habitat Units
WFM													
1&													
GM1	Improved grassland; other mowing regime	GI0	3		0		0	GM2Z	0.2	0.6	1	35.91	21.55
WFM													
1&													
WFM													
2	Neutral grassland; mown	GN0	6		0		0	GM2	0.3	1.8	1	19.72	35.50
WFM													
2	Neutral grassland; mown	GN0	6		0		0	GM2	0.3	1.8	1	6.36	11.45
	Broad-leaved woodland; plantation;												
TS1	recently planted trees	WB3	6		0	WF2	0.75	WG4	0.5	3.375	1	0.55	1.86
H1	Hedgerows; uncut hedge	LF11	6		0		0	LM2	0.9	5.4	1	0.37	2.00
H1	Hedgerows; uncut hedge with standards	LF11	6		0		0	LM21	0.9	5.4	1	0.11	0.59
H1	Hedgerows; uncut hedge with standards	LF11	6		0		0	LM21	0.9	5.4	1	0.82	4.43
H1	Hedgerows; uncut hedge	LF11	6		0		0	LM2	0.9	5.4	1	0.26	1.40
													78.77

Table 3: Habitat Evaluation Procedure Assessment for Greater Horseshoe Bat (post-development).

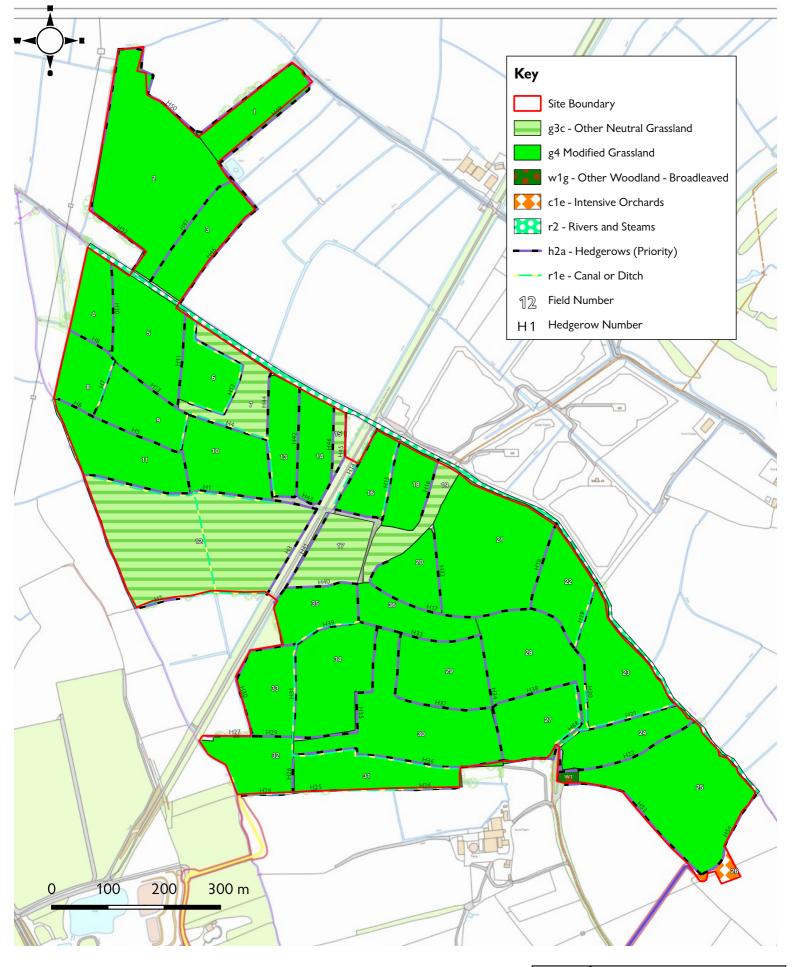
APPENDIX I HEP HABITAT PLAN



				PRELIMINARY	PLANNING	DESIGN	TENDER	CONSTRUCTION
Yanel Farm Solar Ltd Land at Yanel Farm, North Somerset	Habiat E	valuation Prod	cedure (HEP) Plan	4 Stangate Hot Stanwell Road	E	C O	LO	cer _g
E2094901/DR04	DJ	MW	08 March 2023	Penarth Vale of Glamor CF64 2AA	gan		: 033 00 13 00 12 ail: enquiry@soltysbr	rewster.co.uk

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APPENDIX II UK HABITAT CLASSIFICATION PLAN



				PRELIMINARY	PLANNING	DESIGN	TENDER	CONSTRU
Yanel Farm Solar Ltd Land at Yanel Farm, North Somerset		Classification P Assessment	Plan for Biodiversity	4 Stangate Hou				cer _c
E2094901/DR03 Rev C	DJ	MW	08 March 2023	Stanwell Road Penarth Vale of Glamor CF64 2AA	gan		: 033 00 13 00 12 ail: enquiry@soltysbrev	wster.co.uk

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