PROPOSED ANAEROBIC DIGESTION FACILITY AT SPRING GROVE FARM, WITHERSFIELD, NORTHWEST OF HAVERHILL, CB9 7SW

Biodiversity Net Gain (BNG) Assessment

Prepared for: Acorn Bioenergy Ltd

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Summary

While the provisions of the Environment Act 2021 have yet to be enacted through secondary legislation, the Act provides a useful definition and expectation of the future requirement for biodiversity gain in planning. The Act describes Biodiversity [Net] Gain objective as having been met '*…if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the onsite habitat by at least…10%*'.

This project is likely to deliver an increase in the habitat biodiversity value of the site of up to **12.13%.** By demonstrating a level of enhancement at or greater than a **10%** change the proposed development, in line with recent caselaw, is considered to satisfy the current requirement for biodiversity enhancement under the National Planning Policy Framework[1] and the future ambition set out within the Environment Act.

The development does not affect irreplaceable habitat.

The biodiversity gain identified within this report is subject to the development of landscape planting plans and site management plans to secure the predicted level of biodiversity delivery.

[1] Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

1.0 INTRODUCTION

SLR Consulting Ltd (SLR) was commissioned by Acorn Bioenergy Limited to undertake an evaluation of biodiversity performance and to undertake a Biodiversity Net Gain (BNG) assessment or BNG Plan for the proposed development known as Spring Grove Farm and located in Haverhill CB9 7SW in St Edmunsbury, West Suffolk.

The purpose of this BNG Plan is to inform the relevant planning authority of the biodiversity gain outcome.

1.1 Site Description and details of Proposed Development

The Proposed Development is located north of Spring Grove Farm and the A1307, approximately 250m to the west of the edge of the settlement of Haverhill, in West Suffolk District, in the county of Suffolk. It lies immediately to the northeast of the administrative boundary with South Cambridgeshire District, which defines part of the application boundary to the Proposed Development.

The Proposed Development comprises two distinct components, being, firstly, an anaerobic digester plant (the 'AD plant site') and, secondly, a buried pipeline connecting to an offsite digestate lagoon (the 'pipeline and digestate lagoon site').

The AD plant site comprises two adjoining fields pertaining to Spring Grove Farm – Bowsey field and Spring Grove field. It is proposed that Bowsey field will house most of the Site infrastructure, utilising a marginal area of Spring Grove field to the east. The pipeline site extends north from the AD plant to connect to a new digestate lagoon, located approximately 2.5km due north of the AD site beside Cadge's Wood.

Anaerobic Digester (AD) plant site

Bounded by established trees and hedgerow of varying density to the north and west, Bowsey field and Spring Grove field are bordered by an additional tree belt of substantial depth extending along southern boundary. The Stour Brook runs west to east along the southern boundary of the Site and is flanked by the broadleaved woodland/riparian corridor describe above.

Pipeline and digestate lagoon Site

The pipeline and digestate lagoon Site include several relatively large-scale, arable fields located to the north-west of Haverhill, and west and north of Withersfield.

The pipeline would extend north of the main AD Plant site through arable fields located between ancient woodland blocks of Howe Wood, Lawn Wood and Littley Wood, with at least 150m standoffs to each.

Cadge's Wood an ancient woodland, is located adjacent to the west of the digestate lagoon site and north of the end of the pipeline Site. North Wood (ancient woodland) is approximately 300m to the east of the digestate lagoon site.

The proposed layout can be seen at the end of this report (**Drawing 2**).

1.2 Purpose of this Report

This report is intended to provide the planning authority with sufficient information on the biodiversity performance of the proposed development to inform consideration of the planning application and specifically alignment of the application with the relevant planning policy.

1.3 Other supporting documents

This report is supported by a number of other documents or figures, including:

- Current Habitat Baseline Mapping (Drawing 1);

- Proposed Landscape Strategy (Drawing 2);
- Summary outputs or results from use of Natural England's Biodiversity Metric 4.0[2].

1.4 Relevant Policy and Legislation

1.4.1 Environment Act 2021

The Environment Act (the Act) gained Royal Assent on 9 November 2021 and is now enshrined within UK law. The Act provides a mechanism for implementing Government's ambitions for 'improving the natural environment', which were previously set out in publications including the 25 Year Environment Plan. The Act provides recognition of the 25 Year Environment Plan as the first "environmental improvement plan" which will, once the relevant regulations come into force, be used as the basis for understanding the steps Government intends to take to improve the natural environment.

The Act implements the ambitions for an improved natural environment, by setting out statutory or legal requirements which mandate action, under the oversight of the newly formed Office for Environmental Protection (OEP). The focus of the Act is the "…*provision [of] targets, plans and policies for improving the natural environment*…" and its requirements are structured around a number of broad themes.

Of relevance to this report Part 6 of the Act sets out provisions for 'Biodiversity gain as condition of planning permission'. Once enacted, amendments to the Town and Country Planning Act 1990 will in future (expected to be by November 2023) require planning applications to be supported with additional information on the change in the biodiversity value attributed to a project, with biodiversity metric calculations, and with biodiversity gain plans. Planning authorities will be required to consider these submissions in the exercise of their planning functions, to ensure that they are secured, approved and where relevant registered.

While the Environment Act is now part of UK law, its required actions do not commence either directly or immediately, for all parties. There remain a range of preparatory actions that need to be undertaken before further implementation of the wider legal framework (secondary legislation or regulations) will take place.

1.4.2 National Planning Policy Framework

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information.

For local planning policy relevant to biodiversity the relevant local plans should be consulted.

National - The National Planning Policy Framework (NPPF), 2021

The National Planning Policy Framework (NPPF)[3] sets out guidance for local planning authorities and decision makers on how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05[4], the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. Specific policies relating to habitats and biodiversity are set out in paragraphs 174 and 179-182 of the NPPF.

Paragraph 174 states that*:*

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[2] Natural England (2021). The Biodiversity Metric 4.0 (JP039). The Biodiversity Metric 4.0 - JP039 (naturalengland.org.uk)

[3] Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

[4] Office of the Deputy Prime Minister (2005). ODPM Circular 06/2005. Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); …

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; …"

Paragraph 180 of the NPPF states that:

"When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; …

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."

1.4.3 Local Planning Policy

St Edmundsbury Core Strategy[5]

Strategic Objective H:

To maintain, protect and enhance the biodiversity, geodiversity and natural environment and seek opportunities to increase the provision of green open space and access to the countryside.

Policy CS2 Sustainable Development

A high quality, sustainable environment will be achieved by designing and incorporating measures appropriate to the nature and scale of development, including: The protection and enhancement of natural resources:

A) making the most resource efficient use of land and infrastructure;

B) protecting and enhancing biodiversity, wildlife and geodiversity, and avoiding impact on areas of nature conservation interest in both rural and built up areas;

C) identifying, protecting and conserving: a network of designated sites including the Breckland Special Protection Area (SPA) and other sites of national and local importance; Biodiversity Action Plan (BAP) habitat and species; wildlife or green corridors, ecological networks; and other green spaces will be identified, protected and habitats created as appropriate;*

D) conserving and, wherever possible, enhancing the character and quality of local landscapes and the wider countryside and public access to them, in a way that recognises and protects the fragility of these resources;

E) conserving and, wherever possible, enhancing other natural resources including, air quality and the quality and local distinctiveness of soils;

F) protecting the quality and availability of water resources

[5] Core Strategy Final Version with changes (November 2010) (westsuffolk.gov.uk)

Bury St Edmonds vision 2031[6]

The natural and built environment and local biodiversity of the borough will be protected and where possible enhanced to increase access to the countryside and the provision of green open space in recognition of the county ambition to become the greenest county.

[6] BSE-vision-2015v6-hi-res-compressed.pdf (westsuffolk.gov.uk)

2.0 Key Concepts

2.1 Overview

Natural England advise that Biodiversity Metric 4.0 "*can be used or specified by any development project, consenting body or landowner that needs to calculate biodiversity losses and gains for terrestrial and/or intertidal habitats. It will be this metric that underpins the Environment Bill's provisions for mandatory biodiversity net gain in England…".* It has become the standardised way of describing biodiversity change in England, noting that there are a limited number of local exceptions to its use. The biodiversity evaluation of the proposed development has been undertaken using Biodiversity Metric 4.0.

The Biodiversity Metric uses a comparison of habitats as a proxy for biodiversity and describes these habitats using standard units referred to as biodiversity units (BUs). There are 3 distinct types of BUs and these are not of equivalence or interchangeable, they are:

- Habitat BUs – which describe areas of habitat based on measurement in hectares;
- Linear BUs – which describe hedgerows and lines of trees measured in kilometres; and
- Riparian BUs – which described rivers and streams measured again in kilometres.

The overall calculation of the change in biodiversity resulting from a project or development is derived by subtracting pre-project or 'baseline' biodiversity units valuation of an area of land from the number of post-project units.

The results are influenced by:

- Habitat area/length;
- Distinctiveness (an indication of value);
- Condition – an indication of quality; and
- Multipliers or risk factors – that take account of the contribution to local priorities, the difficulty of habitat creation/management, the time it takes to deliver and variation in the location of habitat delivery.

2.2 Definitions

In the context of this project, we have assumed the following definitions:

- Biodiversity net gain (BNG) is an approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

Under the Act the relevant percentage for Biodiversity Net Gain is a change in value attributed to a development ≥10% the pre-development value (of onsite habitats). It should be noted that while the Act sets out the relevant percentage for Biodiversity Net Gain, the relevant parts of the Act (Section 98 and Schedule 14) are still subject to implementation through secondary legislation before they formally apply to applications.

In the interim, clarification of requirements for BNG have been set out through recent appeal decisions[7] which have clarified that

- "*the 10% biodiversity net gain requirement set out in the Act is not yet law and is not applicable to these appeals";*

[7] Planning Inspectorate (2022). Appeal Decisions APP/Y3940/W/21/3278256, APP/Y3940/Q/21/3278923, APP/Y3940/W/21/3282365

- *"Paragraph 174 of the Framework* [the NPPF encourages applicants to]*, … seek a net gain in biodiversity without identifying a specific percentage…"*
- The relevant Core Strategy may *"…seek a net gain in biodiversity without identifying a specific percentage…"; and*
- *"A net gain of just 1% would be policy compliant in these circumstances."*

2.3 Methodology

In supporting the assessment of biodiversity changes SLR have made reference to:

- Biodiversity Metric 4.0 - Calculation Tool;
- Biodiversity Metric 4.0 - User Guide;
- Biodiversity Metric 4.0 - Technical Supplement.

The Metric uses a unified habitat classification system known as UKHab. This system provides a number of benefits over existing systems such as Phase 1 and NVC, and allows Natural England, Scottish Natural Heritage, Natural Resources Wales, Department of the Environment Northern Ireland and JNCC to report consistently on habitats of European and national significance. UkHab information has been used where available to support the assessment of biodiversity changes.

Where habitat data has been recorded using the Phase 1 habitat classification system, these have been subject to conversion to UK Hab classifications using the Metric Phase 1 translation tool.

In addition, the approach requires the condition of habitats to be assessed. Where habitat data was collected before the publication or widespread use of the Metric this is unlikely to have been collected and, in this case, an assumed condition rating has been adopted. Such variations from the Metric approach are explained in the relevant sections.

2.4 Metric 4.0 Principles and Rules

Natural England advise that the Metric is a tool that helps inform plans and decisions, by using habitats as a proxy for measuring biodiversity value, but that any assessment must be undertaken with awareness of its limitations. The metric specifically requires interpretation and ecological expertise to provide evidence of the appropriateness of proposed approaches to BNG and sets out a series of key principles and rules that help to support an understanding of whether proposals support wider considerations that a calculation output.

The Metric User Guide indicates that assessments should be conducted with regard to:

- ***Principle 1****: This metric does not change existing biodiversity protections, statutory obligations, or policy requirements. The use of this metric does not override the ecological mitigation hierarchy and other requirements (such as consenting or licensing processes, for example woodlands).*
- ***Principle 2****: This metric should be used in accordance with established good practice guidance and professional codes.*
- **Principle 3**: This metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.
- ***Principle 4****: Biodiversity units are a proxy for biodiversity and should be treated as relative values.*
- ***Principle 5****: This metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.*
- ***Principle 6****: Habitat interventions need to be realistic and deliverable within a relevant project timeframe.*

- ***Principle 7**: Created and enhanced habitats should seek, where practical and reasonable, to be local to any impact and deliver strategically important outcomes for nature conservation.*
- ***Principle 8**: The metric does not enforce a minimum habitat size ratio for compensation of losses. However, proposals should aim to:*
    - *maintain habitat extent (supporting more, bigger, better and more joined up ecological networks) and*
    - *ensure that proposed or retained habitat parcels are of sufficient size for ecological function.*

In addition to these principles the Metric also sets out a series of rules that should be followed when undertaking a BNG calculation. These are:

- ***Rule 1**: Competency requirements must be complied with.*
- ***Rule 2**: Biodiversity unit outputs are unique to this metric. The results of other metrics, including previous versions of this metric, are not comparable to those of this metric. The three types of biodiversity units generated by this metric (area, hedgerow and watercourse) cannot be summed, traded, or converted between modules.*
- ***Rule 3**: The trading rules of this metric must be followed.*
- ***Rule 4**: Losses and deterioration of irreplaceable or very high distinctiveness habitat cannot be accounted for through this metric.*
- ***Rule 5**: In exceptional ecological circumstances, deviation from this metric methodology may be permitted by the relevant consenting body or planning authority. Any deviation must be fully justified and evidenced, and follow advice set out in Section 3.3.*

The Metric guidance also confirms:

- **Irreplaceable habitats** – the Metric does not adequately measure impacts on irreplaceable habitats and separate consideration should be given to relevant policy and legislation. These habitats can be entered into the calculator to give an indication of value or to support an understanding of enhancement or restoration actions and a guide to minimum areas of replacement habitats (compensation) but that "*bespoke compensation should be agreed with the relevant decision maker for any losses or impacts to these habitats*".
- **Ancient woodland** – "Ancient woodland is a finite and irreplaceable resource and is protected by existing policy and legislation. However, ancient woodland is not a discrete habitat type and, as such, is not listed in biodiversity metric 4.0;
- **Woodland cover** – "*In England there is a presumption against the loss of woodland and a need to increase overall woodland cover. The metric trading rules support the delivery of this policy through requiring 'like for like' habitat replacement for all high distinctiveness woodland types."*
- **Hedgerows** – "*Lost double hedgerows should be compensated with a double hedge, typically a path or track width apart."*

2.5 Evidence of Technical Competent and Experience

This report has been prepared by Darcey Haldar Project Ecologist at SLR Consulting. Darcey has a Master's degree in Conservation Ecology and is a Qualifying member of CIEEM. Darcey has over two years' experience in ecological consultancy and has previous experience in BNG assessment.

This report has been subject to Quality Assurance reviews as per SLRs policies by Olivia Guindon Senior Ecologist at SLR Consulting. Olivia has a Bachelor's degree in Ecology and Wildlife Conservation (BSc Hons) and a Master's

degree in Species Identification and Survey Skills and is a Qualifying member of CIEEM. Olivia has over four years' professional experience within ecological consultancy and has undertaken numerous ecological assessments of this type.

2.6 Limitations

For areas of habitat creation 'Good' condition has been set as habitat objectives in all cases except where the relevant guidance indicates that a 'Moderate' condition is more likely to be achieved and for those habitats which have default condition scores in the Metric eg 'Poor' condition.

No significant limitations were encountered during completion of the Biodiversity Net Gain assessment. Natural England note that Biodiversity Metric 4.0 has been extensively tested, but that they continue to listen to feedback to support correction of any errors or problems. No such errors were encountered.

3.0 Baseline Habitats

3.1 Pre-development Habitats

Full description of the baseline habitats within the Site are provided within the Ecology ES Chapter report (ref: 404.11923.00002 Spring Grove Farm Ecology ES CH8 fv1.pdf). This habitat survey was undertaken in accordance with UKHab methodology and using the associated classification system. The survey was undertaken in February 2022 at the main AD site and November 2022 for the proposed pipeline and lagoon site. A summary of the habitats is given in Table 3-1 and presented at Drawing 1.

Table 3-1 On Site Baseline Habitats within the Proposed Development Site

Broad Habitat	Habitat Type	Size	Description
Cropland	Cereals crops	10.55 ha	Parcels of cultivated land
Grassland	Modified grassland	1.32 ha	Field margins
Woodland	Mixed deciduous woodland	0.19 ha	Replanted woodland
Urban	Developed land	0.15 ha	Access roads and buildings
Heathland and shrub	Bramble scrub	0.01 ha	Small patch of bramble scrub

Consideration of principles and rules

This report has recognised the 'trading down' rule (rule 3), the need to avoid such situations and specifically any losses of irreplaceable or very high distinctiveness habitat. In considering any proposed works to the Site, existing linear features including hedgerows will be retained, and consideration has been given to their enhancement. If required, such habitats will need to be replaced on a "like for like" or "like for better" basis.

3.2 Baseline Habitat Value

The total area of the site including the lagoon is approximately 12.23 ha. This includes areas of cropland (10.55 ha), grassland habitat (1.32 ha), woodland (0.19 ha), scrub (0.01 ha) and urban (0.15 ha). Of these the areas of cropland have the highest biodiversity value (21.11 BU), followed by the woodland habitat (2.31 BU), the grassland habitat (2.64 BU) and the scrub habitat (0.05 BU). The total overall ecological baseline (habitat) is around 26.11 BU (habitats).

3.3 Overall Baseline Habitat Value

A summary of the current baseline biodiversity value to two decimal place is given in Table 3-2.

Table 3-2 Summary of Baseline Habitat Value

BIODIVERSITY UNIT TYPE	AREA/LENGTH	BASELINE UNITS		TOTAL UNITS
	On site	On site	Off site	
Area habitat (On Site)	12.23 ha	26.11 BU	N/A	**26.11 BU**
Linear habitat – Hedgerows	N/A	N/A	N/A	**N/A**
Linear habitat – Rivers and streams	N/A	N/A	N/A	**N/A**

4.0 Post Development Habitats

4.1 Habitat Units

Biodiversity calculations have been completed for:

- Comparison of the current site baseline with the proposed plans.

This comparison supports an understanding of the differences in biodiversity performance of proposed development between the current on-site habitats with the proposed plans.

The proposed plans are illustrated at Drawing 2 at the end of this report.

4.2 Current Baseline to Proposed Plans

In line with Metric 4.0 a comparison has been made between the current site baseline and the proposed post-intervention habitats.

4.2.1 Habitats Units

Once the proposed plans have been delivered, the total area of habitats within the development site is estimated to be approximately 12.23 ha which comprises habitat creation including urban habitat developed land/sealed surface other neutral grassland and woodland/shrub planting. Deciduous woodland is being retained.

The proposed onsite change would lead to an increase in the area of developed land; sealed surface (+6.94 ha), an increase in the area of grassland (+1.04 ha), an increase in woodland (+2.53 ha) and an increase in scrub (+0.02 ha). The woodland parcel on site is retained. Increases in the area of other neutral grassland, scrub and woodland will support improved biodiversity performance.

Overall the project is expected to lead to an increase of 3.17 Habitat BU on site which corresponds to an increase in **12.13%** in biodiversity value.

4.3 Current Baseline to Proposed Plans

The proposed plans are expected to support changes in habitat area of **12.13%** which satisfies the current requirement for biodiversity enhancement under the National Planning Policy Framework. An overall summary of the proposed biodiversity gain is given in Table 4-1.

The biodiversity gain identified within this report requires planting plans and management plans to secure the predicted level of gain.

Table 4-1 Summary of biodiversity net gain

BIODIVERSITY UNIT TYPE	BASELINE UNITS	POST INTERVENTION UNITS		TOTAL NET UNIT CHANGE	% NET GAIN
	On site (dev. Site)	On site (dev. site)	Off site		
Area habitat	26.11 BU	29.27 BU	N/A	+3.17 BU	**12.13 %**
Linear habitat – Hedgerows	N/A	N/A	N/A	N/A	N/A
Linear habitat - Rivers/streams	N/A	N/A	N/A	N/A	N/A

5.0 Recommendations for Achieving Biodiversity Net Gain

The assessment of the proposed development against the current baseline indicates that an increase in biodiversity performance of the Site of approximately **12.13 %** in habitat can be achieved. This is subject to appropriate planting plans and management plans being developed to optimise the delivery of biodiversity performance on the Site and to realise its intended out-turn condition.

This is considered to satisfy the current requirement for biodiversity enhancement under the National Planning Policy Framework[12].

There remain further opportunities for refinement and improvement of the biodiversity performance of the proposed development which will be considered as part of detailed design of this project.

DRAWING 1

Baseline Habitat Map

LEGEND

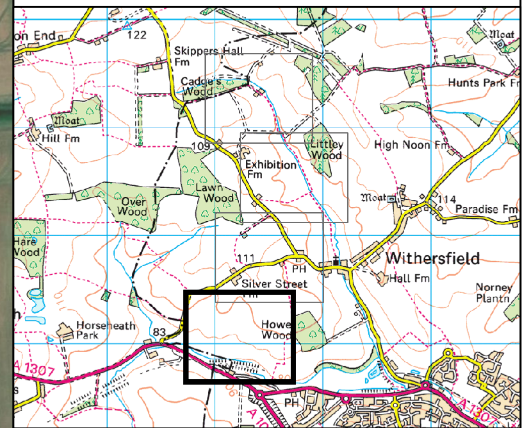
- Site Boundary
- Proposed Rising Main Pipeline Route
- Target Note
- Trees with Bat Roosting Features

UK Habitat Classification

- h2a - Hedgerow (Priority Habitat)
- r - Rivers and Lakes
- r1 - Standing Open Water and Canals
- r2 - Rivers and Streams
- c1c - Cereal Crops
- g4 - Modified Grassland
- h3d - Bramble Scrub
- u1b - Developed Land, Sealed Surface
- w1 - Broadleaved, Mixed and Yew Woodland

Secondary Codes:

10 - Scattered Scrub
11 - Scattered Trees
47 - Native
111 - Road
190 - Hedgerow with Trees
191 - Ditch
1012 - Arable Land



acorn BIOENERGY

SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

SPRING GROVE GREEN POWER

ECOLOGY - PEA

UK HABITAT SURVEY

FIGURE 1.1

Scale	Date
1:3,000 @ A3	AUGUST 2023

11923.00002.0084.3 UK Habitat Survey

564250 564500 564750 565000

248000

247750

c1c
g4
u1b
h2a
c1c
u1b
h2a
c1c
T13
T14

N

0 50 100 150 200
Metres

LEGEND

Site Boundary

Proposed Rising Main Pipeline Route

Trees with Bat Roosting Features

UK Habitat Classification

h2a - Hedgerow (Priority Habitat)

c1c - Cereal Crops

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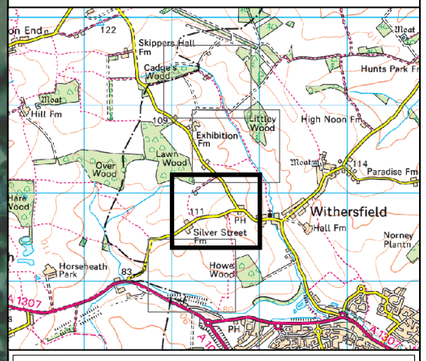

acorn BIOENERGY

SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

T: +44 (0)131 335 6830
www.slrconsulting.com

SPRING GROVE GREEN POWER

ECOLOGY - PEA

UK HABITAT SURVEY

FIGURE 1.2

Scale 1:3,000 @ A3

Date AUGUST 2023

11923.00002.0084.3 UK Habitat Survey

564250 564500 564750 565000

248750

248500

11923.00002.0084.3 UK Habitat Survey

N

g4 r2 r2 g4 c1c h2a 190 r 191 T11 T12 g4 c1c g4 u1b h2a c1c

0 50 100 150 200

Metres

LEGEND

- Site Boundary
- Proposed Rising Main Pipeline Route
- Trees with Bat Roosting Features

UK Habitat Classification

- h2a - Hedgerow (Priority Habitat)
- r - Rivers and Lakes
- r2 - Rivers and Streams
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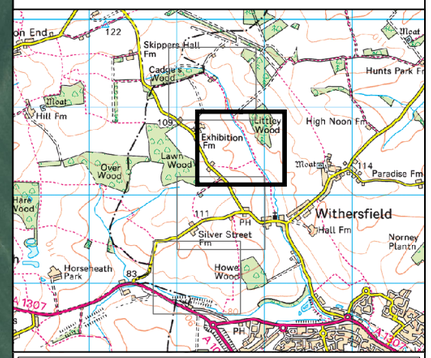


acorn BIOENERGY

SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

SPRING GROVE GREEN POWER

ECOLOGY - PEA

UK HABITAT SURVEY

FIGURE 1.3

Scale 1:3,000 @ A3

Date AUGUST 2023

564000 564250 564500 564750

249500

249250

c1c g4 h2a c1 10 11 u1b 11 c1 h2a g4 c1 c1c g4 r2 r 191 u1b u1b 111 g4 c1c

N

0 50 100 150 200

Metres

LEGEND

Site Boundary

Proposed Rising Main Pipeline Route

UK Habitat Classification

r - Rivers and Lakes

r2 - Rivers and Streams

c1 - arable and horticulture

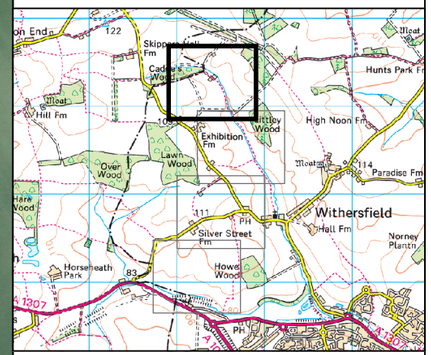
c1c - Cereal Crops

g4 - Modified Grassland

h2a - Hedgerow (Priority Habitat)

u1b - Developed Land, Sealed Surface

Secondary Codes:
10 - Scattered Scrub
11 - Scattered Trees
47 - Native
111 - Road
190 - Hedgerow with Trees
191 - Ditch
1012 - Arable Land



acorn BIOENERGY

SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

SPRING GROVE GREEN POWER

ECOLOGY - PEA

UK HABITAT SURVEY

FIGURE 1.4

Scale 1:3,000 @ A3

Date AUGUST 2023

11923.00002.0084.3 UK Habitat Survey

DRAWING 2

Proposed Landscape Strategy

\\euafs\NEWFS-E\Projects\404\V11923 - Acorn Bioenergy\00005 - Thurlow\Tech\LA\Dwgs_Wking\CAD Master\Thurlow - Site Layout - FIGURE 6 - Landscape Strategy_P02-V2.dwg   Cori Moran   25/05/2023

Species	Common Name	Percentage
Wildflowers		
Achillea millefolium	Yarrow	0.50
Centuarea nigra	Common Knapweed	1.70
Cruciata laevipes	Crosswort	1.50
Daucus carota	Wild Carrot	0.50
Knautia arvensis	Field Scabious	0.50
Leucanthemum vulgare	Oxeye Daisy	1.50
Malva moschata	Musk Mallow	2.00
Medicago lupulina	Black Medick	0.20
Plantago lanceolata	Ribwort Plantain	3.00
Poterium saguisorba ssp sanguisorba	Salad Burnet	1.50
Primula veris	Cowslip	0.09
Ranunculus acris	Meadow Buttercup	0.30
Rhinanthus minor	Yellow Rattle	0.99
Silene dioica	Red Campion	0.49
Silene Vulgaris	Bladder Campion	0.19
Grasses		
Agrostis capillaris	Common Bent	8.50
Cynosurus cristatus	Crested Dogstail	29.75
Festuca rubra	Red Fescue	25.50
Phleum bertolonii	Smaller Cat's-tail	4.25
Poa pratensis	Smooth-stalked Meadow-grass	17.00
Total		100

Woodland Mix		
Tree Species		
Quercus robur	Oak	20
Tilia Cordata	Small-Leaved Lime	20
Carpinus Betulus	Hornbeam	10
Fagus sylvatica	Beech	10
Betyla pendula	Birch	10
Understorey/Shrub Species		
Sambucus nigra	Elder	5
Crataegus monogyna	Hawthorn	5
Ilex aquifolium	Holly	5
Corylus avellana	Hazel	5
Viburnum opulus	Guelder Rose	5
Prunus Spinosa	Blackthorn	5
Total		100

Proposed Mixed Native Scrub Planting

Species	Common Name	Percentage
Acer campestre	Field Maple	7
Cornus sanguinea	Dogwood	7
Corylus avellana	Hazel	7
Crataegus monogyna	hawthorn	20
Euonymus europaeus	Spindle	7
Ilex aquifolium	Holly	7
Prunus avium	Wild Cherry	7
Prunus spinosa	Blackthorn	20
Quercus robur	Pedunculate Oak	20
Total		100

Notes:

Legend:

- PROPOSED SPECIES RICH GRASSLAND
- PROPOSED WOODLAND MIX
- PROPOSED MIX NATIVE SHRUB PLANTING
- EXISTING MATURE TREES TO BE RETAINED
- LAGOONS
- HRA ROAD
- CONCRETE ROAD
- GRAVEL
- BUILDINGS / PLANT
- AGRICULTURAL HRA CLAMP
- PROPOSED TANK BUND SLAB BUILD UP
  Fibre Reinforced Concrete

Rev	Amendments	Date	By	Chk	Auth
P02	UPDATED ENTRANCE ROAD	22/08/23	CM	MB	RT
P01	ORIGINAL ISSUE	26/05/23	CM	MB	RT

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Drawing Status & Suitability Code

Client
ACORN BIOENERGY

Project
SPRING GROVE GREEN

Drawing Title
LANDSCAPE STRATERGY

Scale		SLR Project No.	
AS SHOWN @ A2			
Designed	Drawn	Checked	Authorised
	CM	MB	RT
Date	Date	Date	Date
	22/08/23	22/08/23	23/08/23

Drawing Number: FIGURE 6   Rev.: P02

APPENDIX 1

Habitat Condition Assessment Sheets

Condition Sheet: WOODLAND Habitat Type

UKHab Habitat Type(s)

Woodland and forest - Lowland beech and yew woodland
Woodland and forest - Lowland mixed deciduous woodland
Woodland and forest - Native pine woodlands
Woodland and forest - Other coniferous woodland
Woodland and forest - Other Scot's pine woodland
Woodland and forest - Other woodland; broadleaved
Woodland and forest - Other woodland; mixed
Woodland and forest - Upland birchwoods
Woodland and forest - Upland mixed ashwoods
Woodland and forest - Upland oakwood
Woodland and forest - Wet woodland

Site name/location	Spring Grove Green Power	**Onsite/offsite**	Onsite
Habitat's Central Grid	TL 64171 46978	**Unique polygon**	
Metric 3.0 survey reference (if condition assessment of this polygon relates to a wider habitat survey)		**Limitations (if applicable)**	

Habitat Description

To the north and south of the main AD site lies a belt of mixed woodland although predominantly broadleaved dominated by oak and ash. The majority of the shrub layer is open and similarly the ground flora is patchy with areas of dense bramble.

See UKHab

This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here:

Woodland Wildlife Toolkit (sylva.org.uk)

Condition Assessment Criteria

	Indicator	Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes/Justification
1	**Age distribution of trees**[1]	Three age classes present	Two age classes present	One age class present	1	No significantly different layers in woodland
2	**Wild, domestic and feral herbivore damage**	No significant browsing damage evident in woodland[2]	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	3	No significant browsing damage evident
3	**Invasive plant species**[3]	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	3	No invasive plants recorded during the survey.
4	**Number of native tree species**	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	2	Yew, ash, sycamore, oak recorded.
5	**Cover of native tree and shrub species**	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	2	Yew, ash and oak recorded. Sycamore also present.

6	**Open space within woodland**[4]	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	3	Few areas of temporary open place during survey
7	**Woodland regeneration**[5]	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	1	No classes or coppice regrowth recorded during survey
8	**Tree health**	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	3	No evidence of pests or diseases recorded during survey.
9	**Vegetation and ground flora**	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	1	No ancient woodland flora indicators or NVC plant community present
10	**Woodland vertical structure**[6]	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	1	One storey.
11	**Veteran trees**[7]	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	1	No veteran trees recorded during survey
12	**Amount of deadwood**	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	3	High proportion of deadwood
13	**Woodland disturbance**[8]	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	2	Large patches of nettle indicating nutrient enrichment.
				Total Score	26	

Condition Assessment Result	Condition Assessment Score	Result Achieved
Total score >32 (33 to 39)	Good (3)	Moderate
Total score 26 to 32	Moderate (2)	
Total score <26 (13 to 25)	Poor (1)	

Suggested enhancement interventions to improve condition score

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UKHab Habitat Type(s)			
Grassland - Modified grassland			
Site name/location	Spring Grove Green Power	**Onsite/offsite**	Onsite
Central grid reference of habitat	TL 64159 46930 and TL 64306 49503	**Unique polygon reference**	
Limitations (if applicable)		**Metric 3.0 survey reference (if condition assessment of this polygon relates to a wider habitat survey)**	

Habitat Description

Small area of modified grassland in gateway between arable and adjacent field. Very damaged with track marks due to frequent vehicular use. Species in this area comprised common nettle, cow parsley (Anthriscus sylvestris), hedge mustard (Sisymbrium officinale), false oat-grass (Arrhenatherum elatius), red dead nettle (Lamium purpureum), cleavers (Galium aparine), shepherd's purse (Capsella bursa-pastoris) and creeping thistle (Cirsium arvense).

See UKHab

	Condition Assessment Criteria	Condition Achieved (Y/N)	Notes/Justification
1	There must be 6-8 species per m2. If a grassland has 9 or more species per m2 it should be classified as a medium distinctiveness grassland habitat type. **NB - this criterion is essential for achieving moderate condition.**	N	Species poor predominantly false oat grass with sporadic common nettle, cow parsley, hedge mustard, red dead nettle, cleavers, shepherd's purse and creeping
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	Tussocky in nature but not varied
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	No scrub.
4	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	N	High levels of access causing extensive patches of bare ground.
5	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	N	As above
6	Cover of bracken less than 20%.	Y	No bracken.
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	No invasive species recorded during surveys.
		Essential criterion 1 achieved (Y/N)	N
		Number of criteria passed	3

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Passes 6 or 7 of 7 criteria including passing essential criterion 1	Good (3)	
Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)	
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)	Y

Suggested enhancement interventions to improve condition score

EUROPEAN OFFICES

United Kingdom

AYLESBURY
T: +44 (0)1844 337380

BELFAST
belfast@slrconsulting.com

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 906 4280

CARDIFF
T: +44 (0)29 2049 1010

CHELMSFORD
T: +44 (0)1245 392170

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: + 44 (0)1392 490152

GLASGOW
glasgow@slrconsulting.com

GUILDFORD
guildford@slrconsulting.com

LONDON
T: +44 (0)203 805 6418

MAIDSTONE
T: +44 (0)1622 609242

MANCHESTER (Denton)
T: +44 (0)161 549 8410

MANCHESTER (Media City)
T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE
T: +44 (0)191 261 1966

NOTTINGHAM
T: +44 (0)115 964 7280

SHEFFIELD
T: +44 (0)114 245 5153

SHREWSBURY
T: +44 (0)1743 23 9250

STIRLING
T: +44 (0)1786 239900

WORCESTER
T: +44 (0)1905 751310

Ireland

DUBLIN
T: + 353 (0)1 296 4667

France

GRENOBLE
T: +33 (0)6 23 37 14 14