

Updates to ES Chapter 2: Site and Surroundings and Chapter 3: Project Development

1.1 Introduction

SLR Consulting Limited (SLR), on behalf of Acorn Bioenergy Ltd (the Applicant), have prepared this Environmental Statement (ES) Addendum to consider three minor design amendments (the 2025 Design Refinements) in combination with the design revisions previously submitted by the applicant in October 2024 (the 2024 Design Changes), to the proposed anaerobic digestion (AD) facility (the Proposed Development) at Land West of Ashton Road, Ashton Keynes (the Site).

The purpose of these updates to Chapter 2: Site and Surroundings and Chapter 3: Project Description is to present the updates to the description of the project which have arisen from the design changes.

The full results of the EIA review are reported separately in the accompanying ES Addendum which should be read alongside the original Environmental Statement (ES) submitted to Wiltshire Council (WC) in April 2023 (Application Ref. PL/2023/03359).

1.2 Context of the Proposed Amendments

In response to representations made during the consultation period on the Application, the Applicant amended the design of the Proposed Development in October 2024 to fundamentally reduce its scale, bulk and mass and to expand the proposed landscape screen planting. This was made possible by the Applicant selecting a different anaerobic digestion technology provider. The 2024 Design Changes comprised a comprehensive set of updated planning application drawings (c.27 in total), as well as new drainage plans and a Drainage Impact Assessment. The Applicant, when improving the design from a landscape and visual impact perspective, also took the opportunity to deliver changes to reduce the potential for odour impacts from the operation of the Proposed Development.

The 2025 Design Refinements are now proposed following discussions with WC's planning and landscape officers in March 2025 which agreed the following three additional design improvements would deliver further betterments:

- A reduction in the height of the Chicken Manure Processing Building from 13m to 9.2m to further minimise the overall visible massing of the Proposed Development when viewed in the early years from Ashton Road and the nearby public footpath (prior to the growth of mitigation planting);
 - Enhancements to the landscape proposals, which will provide effective screening from early years of operation. This includes a native willow screen behind the proposed perimeter fence along a section of the site access bellmouth to reduce visibility of the Main Gate Kiosk and Staff Offices from passing traffic using Ashton Road; and
- Adding a native wildflower meadow adjacent to the northwest corner of the Site to maximise biodiversity net gain.

Updates to Chapter 2: Site and Surroundings

Chapter 2 includes a section on Planning History, within the surrounding area. The planning application Ref 21/0520/REM, listed in paragraph 2.12 requires correction to read as follows:

- 21/02520/REM Reserved matters application, pursuant to application 16/02609/OUT for the provision of 75 Dwellings & Associated Works Including Replacement of 27 Existing Dwellings and the Conversion of Existing Listed Buildings.

Since the AD facility application was submitted to WC, planning permission has been granted for sand at gravel extraction at Wheatley's Farm Quarry, approximately 2.5km southeast of the Site (Ref. PL/2023/03298).

The Air Quality Impact Assessment Addendum (AQIAA) (attached at Appendix F of the ES Addendum) considers the potential for cumulative effects of the Proposed Development being constructed and operated in combination with the following schemes which are proposed, under construction or completed within the surrounding area:

- Saxon Meadow, South Cerney, redevelopment of land at Berkeley Close, South Cerney, Cirencester -18/04656/REM, approximately 500m northeast of the application site.
- Cotswold Community, Ashton Keynes -21/02520/REM. Approved development of 75 dwellings approximately 350m southwest of the application site.
- The 'Steadings' mixed-use development at Chesterton, Cirencester 16/00054/OUT, approximately 4km north of the application site.
- Wheatleys Farm Quarry, Ashton Keynes - PL/2023/03298, approximately 2.5km south-southeast of the application site.

The 2023 ES included the Saxon Meadows and Cotswold Community (now King's Water) as sensitive receptors, therefore, the potential impacts on these sites have already been taken into consideration

The Steadings Development and Wheatley's Farm Quarry are considered to be too far from the application site for cumulative impacts to arise. In addition, it is noted that the Quarry would be subject to a routing agreement, to steer HGVs to the Spine Road and away from minor roads to the north of Ashton Keynes. More detail on the cumulative impacts is set out in the AQIAA.

The 2025 AQIAA also notes, in paragraph 4.1.6 that since the 2023 Air Quality Impact Assessment, APIS GIS data (accessed September 2025) has been updated to show the extent to which the nearest SSSI, the Cotswold Water Park (now Cotswold Lakes) has been extended to include more lakes and habitat; the nearest of which include areas within 300m of the Application Site.

As SLRs 2023 Ecological Assessment work and BMD's 2025 updated Ecological Assessment work considered the impacts on habitats within 500m of the Application Site boundary, we are satisfied that impacts on land within the extended SSSI have been considered. The Application Site remains free of any ecological designations.

Updates to ES Chapter 3: Project Description

The purpose of these updates to Chapter 3 is to ensure that the Chapter presents updated information where required and refers to the latest drawings and supporting documents.

The full results of the EIA review are reported separately in the accompanying ES Addendum which should be read alongside the original Environmental Statement (ES) submitted in April 2023.

The EIA Regulations require that the Environmental Statement (ES) should include a description of the development, which then provides a context for the assessment of the aspects of the environment likely to be significantly affected by the development, and the measures available to prevent, reduce and where possible offset any significant effects on the environment. These remain largely unchanged from the original submission, but the information below provides an update on the Proposed Development for which planning permission is now being sought.

The original description and dimensions of the components which will make up the AD Facility, based on the originally submitted Site Layout Plan Ref 29419 -101 Rev F, are set out in Table 3-1 of Chapter 3. The updated description and dimensions of the components is set out in **Table 1**.

The revised description and dimensions in **Table 1** below align with the revised layout shown in Layout Plans Sheets 1 and 2 Ref. 29419/P2/101/PO3, which were submitted to WC in October 2024 and the 2025 Design Refinement Drawings, set out in Section 1.3 of the Planning, Design and Access Statement Addendum.

Table 1 Description and Dimensions of AD Facility Components

Element	Description of Equipment/Plant	Dimensions
Silage Clamps (x3)	Each silage clamp will be constructed with pre-cast 3.5m high concrete panels that are filled with earth for additional strength. The clamps will have a hard wearing and acid resistant rolled asphalt floor. The clamps will have a liquid drainage and collection system for dirty liquid run-off. This will be pumped directly into the dirty water tanks for feeding back into the process.	Clamps 1 & 2: 101m long x 35m wide x 3.5m high. Clamp 3: 124m long x 35m wide x 3.5m high.
Straw Processing Building (x1)	Straw storage building including bunker and processing. To be partly clad in green under a fibre cement roof or clad using an alternative colour agreeable to the LPA.	Building is 43m x 23m x 9.2m to ridge
Chicken Manure Reception Building (x1)	All unloading and storage of poultry litter and farmyard manure will be carried out within this building [which is equipped with a dedicated air extraction and abatement system. To be partly clad in green under a fibre cement roof or clad using an alternative colour agreeable to the LPA.	26.0m x 19.5m x 8.1m to eaves, 9.2m to ridge, stack exhaust 10.2m.

Feeder Hoppers (x3)	Feedstock is fed into the feed hoppers (one for straw and 2 for silage). Once the feed is loaded it exits and proceeds for further feed pre-treatment before pumped to the digesters. To be green or an alternative colour agreeable to the LPA.	Each 11m x3m 3.5m
Process Liquid Tanks (x4)	Storage of liquid feedstocks (fitted with emissions abatement) and contaminated dirty water run-off to be reused in the process. To be clad in green or an alternative colour agreeable to the LPA.	Each measure 8m high and 8m diameter
Primary and Secondary Digester Tanks (x2)	Tanks take feedstock, pumped from upstream processing equipment, with sufficient dry matter content. Generated biogas will flow to the digester headspace before treatment to downstream equipment. To be clad in green or an alternative colour agreeable to the LPA.	9m straight wall height, flat topped. 45m diameter.
Pump room container (x1)	Contains pumps to facilitate substrate/digestate between the final storage tank and digesters. Feed dosing undertaken here along with heat distribution systems to main equipment.	13m x 3m x 3m
Post Digester Tank (x1)	Generated biogas will flow to the digester headspace before treatment to downstream equipment.	Total height to top of dome: 16.5m. 34m diameter
Separator Building (x1)	The separator within the building would extract solids from the digestate before the liquid digestate is pumped to the digestate lagoons. The solid digestate is stored within the building prior to removal off-site.	26m x 20m x 9m to ridge height
Pasteurisation Tanks (x4)	The pasteurisation tanks would treat the fermented feedstock prior to it being pumped into the digestate lagoons.	Each tank is 3m diameter x11m high
Covered Digestate Lagoons (x2)	Used to store liquid digestate prior to export as natural fertiliser. The lagoons will comprise a reinforced HDPE liner with a floating HDPE cover, with a leakage detection and geotextile protective lining. This protective lining will sit within a bunded earthen lagoon wall. There is one emissions outlet per lagoon and each vent is fitted with emissions abatement	Storage capacity 2 x 8,000m ³ .
Enclosed Gas Flare	For infrequent use as safety device to burn off any excess gas.	Stack height 10.5m. Flue diameter 1.8m
Biogas Upgrade Unit	To clean and pressurise the gas prior to transfer to the gas grid. CO ₂ vent is connected from gas upgrade unit to the CO ₂ Capture Unit	Footprint 26 x 9m x 3m. Vent height 7.5m.
Propane Tank (x1)	The propane tanks will add propane to the biomethane gas as required.	25ft in length tank, placed below ground

		SSL +93.50
Compressors (x2)	Compression of gas before injecting into road tankers. Located beside lorry bays	Each 6.5m x 3m x 3m, stack 9m
CO ₂ Capture Unit and Tanks	Captured CO ₂ stored in tanks to then be transported on road tankers for utilisation or storage.	Capture Unit: 10m x 16m x 4.75m Tanks x 2 each 13m long x 3m diameter x 3.4m high
Combined Heat and Power (CHP) Units (x2)	To provide the facility with power and heat. One unit would be fuelled by biogas from the digestion process and the other by imported natural gas. To be clad in juniper green or an alternative colour agreeable to the LPA. Associated equipment includes heat exchangers and pumping systems.	Each 13m x 3m x3 with stack 9m
Vehicle Parking	HGV parking bays x 5 8 bay car parking for visitors and office	
New Site Access Roads	70m long on site hard surfaced access road.	70m long
SCADA Alarm Monitoring Systems	Supervisory Control and Data Acquisition (SCADA) system that will provide an interface for the operator to control the plant, and capture/record all data produced by the process.	N/A
Rainwater Harvesting Lagoon (x1)	To collect clean surface run off from the site.	Capacity approx. 2,000m ³
Site Boundary Fencing/Enclosures	Site access and boundary secured by post and wire fencing. Main compound secured by V mesh fencing. Wildlife stock fencing around the rainwater lagoon.	2.4m high
Weighbridge and Site Office Welfare Office Unit (x2)	To record incoming and outgoing deliveries	4 x 40ft containers on top of each other.

1.3 Proposed Landscaping Strategy

The updated Landscape Strategy Plan (Drawing No. P24-1022_EN_010_B_A1), dated 12/06/2025 supersedes the 'Landscape Masterplan' (Figure 6 of the Landscape and Visual Impact Assessment in Chapter 7 of the 2023 ES.

A copy of the updated Landscape Strategy Plan is attached at **Appendix C** of the ES Addendum.

1.4 Lighting Assessment

The Applicant commissioned an Updated Lighting Assessment to reflect the updated design and site layout of the Proposed Development.

The Updated Lighting Assessment, dated October 2025, should be read alongside the following drawings that accompany it:

- SK-01 Residential Receptor Location Plan
- SK-02 Assessed Scheme of Lighting
- SK-03 Light Spill

The Updated Lighting Assessment concludes that *“Based on the Assessed Scheme of Lighting, it has been demonstrated that the proposed development will be compliant with the residential receptor criteria as set out in the Institution of Lighting Professionals (ILP) Guidance Note GN/01/21. By demonstrating compliance with the ILP national guidelines, the proposals ensure that the impact of light pollution on local amenity is suitably limited, consistent with the requirements of the NPPF. Specifically, the Assessed Scheme of Lighting associated with the Proposed Development is compliant with the ILP post-curfew obtrusive light criteria for ILP Environmental Zone E2. The adopted criteria are as follows:*

- *‘Light intrusion’ limit of 1 lux (E - vertical illuminance)*
- *‘Glare’ limit of 0.29(d) to 500 cd (I - source intensity)*
- *‘Sky-glow’ limit of 2.5 % (upward light ratio)”.*

The levels of light spill to potentially light-sensitive ecological receptors are set out in Drawing SK-03 (light spill).

The following mitigation measures are integral to good lighting design, and have therefore been included in the Updated Lighting Assessment as a matter of course:

- the use of luminaires with zero direct contribution to upward light;
- adopting zero-degree luminaire uplift angles;
- careful aiming and positioning of luminaires;
- careful selection of luminaires;
- the use of lower output luminaires bounding potentially light-sensitive ecological receptors;
- the use of optimal light distributions for their specific location and orientation;
- optimisation of mounting heights;
- the use of presence detection controls and zoned switching;
- a 365-day timer clock and photocell controls;
- using the lowest colour temperature light sources practicable (3000K generally & 4000K for explosive atmosphere luminaires but only where 3000K is not available);

- the adoption of the lowest intensity LED modules practicable; and
- minimising the task illuminance level.

The following mitigation measures have been adopted in the design and planned operation of the Proposed Development:

- embedded by design, the siting of areas requiring a high level of illumination away from potentially light sensitive ecological receptors; and
- by risk-assessed design & operation (by others), not lighting the site access road mouth.

1.5 Lightning Mitigation Design Strategy

A Lightning Mitigation Design Strategy has been prepared and submitted to explain the importance of lightning protection systems for operational biomethane gas generating facilities and the regulations and standards they must meet. It explains the various forms of protection methods available and how they work, and how important a bespoke site design is to deliver effective protection to take account of the height of the tanks, the selected technology provider, the presence of people, surrounding topography and local weather conditions. The Applicant does not support a generic lightning protection approach, instead favouring assessment post any planning approval, when the detailed design phase has been completed and an accurate evaluation of real process conditions is possible.