



CONTENTS

11. OTHER ENVIRONMENTAL EFFECTS	2
Introduction.....	2
Human Health.....	2
Land Use and Land Take	2
Economy and Employment.....	3
Impacts on Housing and Services	3
Residential Amenity	4
Risk of Accidents	5
Mitigation	7
Monitoring.....	9
CUMULATIVE EFFECTS	10
Cumulative Impacts on Human Beings	10
Cumulative Effects on Sensitive Environmental Receptors	11
CUMULATIVE IMPACTS ON OTHER DEVELOPMENT PROPOSALS	14
Summary and Conclusions.....	15
CLIMATE CHANGE	16

11. OTHER ENVIRONMENTAL EFFECTS

Introduction

- 11.1 The 2017 EIA Regulations introduced the requirement to consider land use and population¹ along with the likely significant effects of the development on the environment resulting from (inter alia) the risks to human health.
- 11.2 This Chapter considers the potential impacts of the Proposed Development on the local population and land uses of the area. It then goes on to consider how the AD facility can be constructed and operated in a way that minimises the impact on climate change. Cumulative impacts are also addressed.

Human Health

- 11.3 The World Health Organization (WHO) defines health as a state of 'complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'. A briefing note issued by Public Health England in July 2017, covers the topic of human health in EIA and states that:

*'Population and human health will be on the list of environmental topics that will need to be considered when scoping every EIA but should only be scoped into an EIA where the likely health consequences of the projects are considered to be significant.'*²

- 11.4 None of the technical assessments undertaken in support of the planning application have identified significant, temporary or permanent impacts on population or human health. However, the conclusions of the technical assessments are drawn out in this chapter.
- 11.5 Human health is influenced by a variety of factors, such as education, employment, income, housing, social networks, and access to social and public health services. The assessment of the likely significant effects of the Proposed Development on human health required consideration of the following: Hydrology and Flood Risk, Noise, Air Quality and Traffic, Land Quality, and Ecology. Comprehensive assessments in respect of these technical disciplines have been carried out and are submitted as part of the planning application.

Land Use and Land Take

- 11.6 The application Site is currently arable land. Whilst the AD facility would remove the land within the

¹ Regulation 4(2)(a)

²https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/629207/Health_and_environmental_impact_assessment.pdf

application boundary from productive farmland, it is proposed to include native, species rich hedgerow planting along the north and western boundaries of the Site, with the aim of improving connectivity for wildlife and providing a visual screen for adjacent PRow users. Additional native tree and shrub planting and species-rich grassland around the Site periphery will also be introduced, thereby providing a net gain for biodiversity.

- 11.7 The Biodiversity Net Gain assessment undertaken in support of this application concluded that this project is likely to deliver an increase in the habitat biodiversity value of the site of up to **19%** and in the linear habitat (hedgerow) an increase in biodiversity value of the site of up to **102%**. 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 and the future ambition set out within the Environment Act.
- 11.8 Furthermore, the solid and liquid digestate produced by the AD facility would be used as a soil conditioner and fertiliser which would boost the productivity of the agricultural land it is applied to.

Economy and Employment

- 11.9 The National Planning Policy Framework (NPPF) 2021 recognises the contribution that planning can make in reducing climate change. The significant increase in production of renewable energy associated with the operation of the AD facility would make a substantial contribution to climate change and cutting greenhouse gas emissions.
- 11.10 The proposed development would generate up to 100 jobs during the course of the construction period and between 5-6 full time jobs once operational, together with additional jobs for vehicle drivers, local suppliers who would provide services to the Site and contractors who service and maintain site machinery. In addition to these direct socio-economic benefits, the AD facility would contribute to the economy through taxes and business rates.
- 11.11 Contractual arrangements with local farm providers of feedstock ensure best practice within their operations and this contributes to good land stewardship and protection of the natural environment - meeting the Environmental Objective of the NNPF. These benefits to the sustainability of the agricultural sector in the area such as supporting jobs and decarbonising operations contribute to the Economic and Social Objectives of the framework.
- 11.12 In summary, although the proposed development would not generate significant employment once operational, there would be a beneficial effect on the local economy as a result of the direct and indirect jobs.

Impacts on Housing and Services

- 11.13 As a result of the low numbers of jobs to be generated by the AD facility, there would not be a significant shift in population inward or outward. Therefore, it is not considered that the Proposed

Development would lead to any impacts upon housing or increased burden on local public services.

Residential Amenity

- 11.14 There are a limited number of residential properties in the vicinity of the application Site, the closest of which are located at the Old Farmhouse/ Cotswold Community a cluster of listed and non-listed buildings situated to the southwest of the Site to the southwest and the Downs Cottage to the north. None of the technical assessments which address residential and public amenity have identified any significant, long term, adverse impacts upon residential amenity at these properties. The potential noise and traffic impacts are set out within the associated Noise and Transport Assessments, while landscape and visual impacts are detailed within Chapter 7 of this ES: Landscape and Visual Impact Assessment (LVIA).
- 11.15 The Noise Assessment concluded a low impact at the noise sensitive receptors, where the sound resulting from the Proposed Development will be largely unnoticeable at the Noise Sensitive Receptors (NSR). Development noise emission rating level has been predicted to be generally stable, in comparison to the noise levels of local and distant traffic. The character of the source sound has been considered unlikely to be distinguishable at the receptors based on the low predicted emissions rating level and the level and character of the residual sound climate. The ambient sound level at the receptor is not predicted to subjectively increase as a result of the development.
- 11.16 During the daytime, the predicted plant emissions rating level lies below the representative background sound level. This is an indication of the sound source having a low impact. During the night-time, the plant emissions rating level has been predicted to be above the background sound level, in the order of 5 dB at Downs Cottage and 7 dB at Cotswold Community and tending towards a worst-case and with the precautionary penalty applied.
- 11.17 It was concluded that noise should not present reasonable grounds for planning refusal. In accordance with overarching planning requirements, measures have been satisfactorily considered to *'mitigate and minimise adverse impacts on health and quality of life'* The likely acoustic effects have been established about the 'no observed-adverse-effect level' (NOAEL) and 'Lowest-observed-adverse-effect level', (LOAEL) thresholds of the Noise Policy Statement for England (NPSE), such that noise is not expected to cause any change in behaviour or attitude. Mitigation has been included in the noise emissions predictions, to include proprietary plant equipment attenuation including CHP stack silencers.
- 11.18 In terms of visual impact, the LVIA concluded that the Proposed Development would incorporate appropriate landscape proposals that reflect the character of the area (LCA 12 Thames Open Clay Vale) through appropriate design and management. Although the Proposed Development would be visible to an extent, through the appropriate use of colour and materials and the introduction of new landscape elements within the scheme, there would be limited effect on the landscape character and visual amenity within the surrounding area. This is detailed further within Chapter 7: LVIA and in the supporting wireline drawings and photography montages.

- 11.19 As part of the Site Access Design and Transport Statement, the proposed scheme has been designed and reviewed in terms of highway safety and capacity. The Proposals include the widening of the entrance to the Site from Ashton Road to enable HGVs to pass between the Site access and the B4696. This will improve the safety and operation of Ashton Road. It has been concluded that, subject to the implementation of a Traffic Management Plan (TMP) to manage seasonal traffic fluctuations, there would be no detrimental impacts to the safety and/or operation of the local highway.
- 11.20 Paragraph 111 of the National Planning Policy Framework (NPPF) states: 'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.' It is concluded that the Proposals will not result in an unacceptable impact on road safety, highway operation or network capacity.

Risk of Accidents

- 11.21 Schedule 4 of the EIA Regulations indicates that an EIA should include the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters. Paragraph 8 to Schedule 4 of the EIA Regulations requires EIA Reports to include the following:

"A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned."

- 11.22 The following definition follows advice given by the Health and Safety Executive (HSE)³ with regard to major accidents:

"An incident will be a major accident if it results in serious danger, whether realised or potential, to the natural or built environment. The effect may be immediate or delayed and may sometimes be relatively long-lasting but not necessarily irreversible. Operators should consider the potential for widespread loss or damage to the general environment as well as the risk of adverse effects on a rare, unique or otherwise valued component of our natural or built environment."

- 11.23 The definition of disaster is normally considered to involve a sudden event, causing great damage and/or loss of life. A disaster can be natural e.g., earthquakes, volcanoes, hurricanes, floods, and fires, or man-made e.g., pollution, explosions, fires, and transportation accidents. Given the location of the Site and the nature of the Proposed Development, there is a low probability of the Site being affected by a natural disaster. Fire prevention measures have been designed into the site layout.
- 11.24 Flooding is unlikely to occur at the Site, due to it being located within Flood Zone 1. Overall, the Site is considered suitable for development, all flood risk posed to the Site such as fluvial, tidal, surface

³ The Control of Major Accident Hazards Regulations 2015

water, groundwater, sewers, canals and infrastructure failure have been considered.

- 11.25 It is concluded that the development will not constrain the movement of surface water on Site, clean surface water will be captured and conveyed to a lagoon using a network of channel drains and underground pipes. Runoff would then be discharged into the adjacent highways ditch at greenfield rates. The lagoon will be designed as such to ensure that sufficient capacity remains for the 1% AEP rainfall event inclusive of allowance for climate change (+20%), to allow for flood management.
- 11.26 Contaminated runoff, caused by silage residue, from the silage clamps and sections of hardstanding area would be collected through a series of drainage channels, pipes, and chambers and be brought into a below ground holding tank. From this tank, runoff will be pumped to three holding tanks within the containment bund, where it will be reused within the process.
- 11.27 If high winds were considered a danger to health and safety, site operations would be postponed and/or the Site closed until safe to return. In summary, the Site is not considered to be highly vulnerable to natural disasters or extreme weather conditions and the Proposed Development is not considered likely to lead to a major disaster or accident.
- 11.28 In terms of monitoring the operational safety of personnel and reducing the risk of accident - a supervisory control and data acquisition (SCADA) system would monitor the facility overnight when it is not manned. The AD facility will include a control system linked to a Supervisory Control and Data Acquisition (SCADA) system which provides an interface for the operator to control the plant components and captures and records all the data produced throughout the process. The control system would control all aspects of the process and send out performance and error alarms to the operator i.e., notifications of flow failures, pump and temperature anomalies and error messages associated with the normal operation of the AD system. The AD plant is therefore reliably automated and secure, with component 'sources' constantly monitored via live alarm status feeds – subsequently ensuring the safety of Site personnel and reducing the risk of accident.
- 11.29 The risk of other accidents relating to the operation of AD facilities is considered to be low as the Proposed Development will use known working practices and technology and operate within a highly regulated industry. Accidents in relation to the Proposed Development could potentially relate to:
- 11.30 A detailed site audit was undertaken to inform the transport assessment which considers the existing highway conditions. This included the following background data:
- traffic accidents relating to vehicles travelling to and from the Site; and
 - spills from vehicles moving within the Site or spillages within the Site. an Automatic Traffic Count (ATC) to determine traffic volumes and actual vehicle speeds;
 - a review of recorded accident data covering the most recent 5-year period on record; and
 - a plan confirming the extents of the highway boundary.

Further to this, the proposed Site Access Junction has been designed in accordance with CD123 DMRB, as a simple priority junction with a 15-metre junction radius, tapering at 1:10 over 25 metres

to the east; the southern radius measuring 7 metres. The junction location benefits from adequate visibility with 2.4 x 160 metre visibility splays as illustrated on the proposed access design; this level of visibility is acceptable in the context of the nature of traffic using Ashton Road, and the speed restriction currently in force.

- 11.31 The design has been assessed in terms of HGV swept-paths; the access considers swept-paths for a maximum sized articulated lorry (16.5t) which demonstrates that this worst-case vehicle can access and egress without issue. Critically, it demonstrates that an HGV can gain access to the Site whilst another HGV waits to exit, avoiding impacting the operational flow of the adjoining B4696 network.
- 11.32 The risk of an accident resulting in a spillage is considered to be no greater in relation to this development than for any other form of development that relies on the transportation of goods and materials by HGVs and tractors and trailers. Spillage kits for fuel spillages would be available at the Site and staff would be trained to use them. All fuel kept at the Site would be stored in appropriately designed, bunded fuel containers to minimise the risk of spillages.

Mitigation

- 11.33 Mitigation measures to be adopted in relation to population and human health during the construction and operation of the AD facility would relate to minimising the effect of the development on surrounding sensitive receptors in relation to dust, ecology, noise, water, traffic and landscape. These measures relate primarily to avoidance, prevention and reduction and are discussed in the noise report which supports the planning application and the technical ES chapters.
- 11.34 Throughout the process of design iteration and improvement, embedded mitigation has been incorporated where possible. Mitigation of the potential landscape and visual effects of have been achieved through the layout of the buildings; how the layout responded to the underlying landform and orientation of the Site; the density and massing of the buildings; and the integration of existing and proposed planting, to reduce views into the site from key viewpoints.
- 11.35 The proposed landscape planting will contribute to minimising any potential indirect effect on heritage assets too.
- 11.36 The primary mitigation measures identified by the technical assessments include the following:
- construction noise controlled to acceptable levels following good industry practice and an appropriate construction management plan (CMP);
 - operational noise controlled through the installation of CHP exhaust stack silencers, the use of proprietary acoustic enclosures on plant, and regular servicing of all plant in accordance with manufacturer's instructions;
 - cover sheeting of silage clamps, enclosed storage of poultry and farmyard manure and tanked storage of slurry to control odour, bioaerosol and ammonia emissions;

- dust controlled to acceptable levels following recommendations set out within the Dust Management Plan (DMP), good industry practice and an appropriate construction management plan (CMP);
- carefully designed lighting scheme to limit light spill from the Site;
- the storage of oils, chemicals and hydrocarbons in bunded areas/spill pallets;
- offsite measures which would allow for the existing hedgerows and hedgerow trees to be retained and managed with addition emergent trees maturing. The aim would be to increase the height of the hedgerow to a height of 2.5m to 3m. any gaps would be infilled with native trees and/ or shrubs and any non-native invasive plant species would be removed, as appropriate. This includes the hedgerow to the north and east of the Site as well as new hedgerow planting to the north-west and south-west to provide visual screening. Planting and the management of such planting is covered under a Memorandum between Acorn and the landowner;
- new native tree and shrub planting (covering approximately 0.84ha) in the form of both a linear belt of trees to the north, west and south-west of the arc clamps and covered lagoons with smaller copses around the lagoons to the south. Tree and shrub planting would provide long term visual screening for adjacent users of the PRoW. Additional individual native trees (7 no) would be introduced in tighter locations where the width between structures is insufficient to establish a belt of trees;
- 228 linear metres of new native species-rich hedgerow with trees (approximately 18 in no) would be introduced to the north-western edge of the Site linking with existing hedgerows. This would provide long-term visual screening for adjacent users of the PRoW;
- additional native tree and shrub planting within the perimeter standoffs and buffers, where space allows, to provide a woodland framework to help conceal the development;
- 1.33ha of shade tolerant species rich grassland within the remaining perimeter standoffs and buffers. Where space allows to improve overall biodiversity, with 0.14 ha of wet grassland along the embankment of the land drain and to the southwest and south of the Site; and
- appropriate use of colour and materials, and the introduction of new landscape elements to limit the effect on landscape character and visual amenity within the surrounding area.

Monitoring

- 11.37 All anaerobic digestion facilities in England, which treat feedstocks such as manures are subject to the Environmental Permitting Regulations (England and Wales) 2016 and are regulated by the Environment Agency (EA). The proposed Ashton Keynes site will require an Environmental Permit to operate, and an application will be submitted to the EA, who will check to ensure the site design meets the required design standards and that it will be operated to Best Available Techniques (BAT). Once operational, Acorn will work with and be audited by the EA, to ensure compliance.
- 11.38 There will be a written and auditable environmental management system in place that will be followed by all site personnel to prevent risk to the environment from all site operations. The permit will ensure the Site is operated in a manner which meets the regulatory requirements of:
- Best Available Techniques (BAT) for Waste Treatment guidelines published by the European Commission including Associated Emissions Limits (AEL);
 - Biological waste treatment: appropriate measures for permitted facilities⁴
 - The Industrial Emissions Directive (2010)
- 11.39 In operational terms this will ensure the following:
- The working practices and operational procedures of the plant are appropriate and regulated;
 - Emissions to the environment will be controlled and regulated to within specified limits;
 - That auditable records are kept of all aspects of permit compliance;
 - That daily checks are carried out to ensure efficient operation of the plant and compliance with the permit;
 - That the Site is managed by a fully trained and Technically Competent Manager (TCM); and
 - That all staff and contractors working on site are fully trained and competent to carry out tasks on site.
- 11.40 Acorn Bioenergy Limited will operate the Site in full compliance with their environmental management systems, the environmental permit and following best practice. They will ensure the plant is also compliant with the Anaerobic Digestion Quality Protocol, the Biomethane Quality Protocol and the British Standards Institute Publicly Available Specification for Digestate (BSI PAS110).

⁴ <https://www.gov.uk/guidance/biological-waste-treatment-appropriate-measures-for-permitted-facilities/1-when-appropriate-measures-apply>

CUMULATIVE EFFECTS

- 11.41 In accordance with the 2017 EIA Regulations, this section includes an assessment of any direct and indirect cumulative effects arising from the Proposed Development when considered alongside any other developments in the area surrounding the Site. The objective is to identify any combined effects from the development or effects from several developments; and if, whilst individually the effects may be insignificant, could when considered together cause a further significant direct or indirect impact requiring mitigation.
- 11.42 Cumulative effects consider other Proposed Development within the context of the Site and any other reasonably foreseeable proposals in the vicinity. The EIA process includes consideration as to whether any of the individual effects of the Proposed Development would combine to create a cumulative effect greater than the sum of the individual effects.
- 11.43 For the purposes of this assessment, cumulative impacts on the following have been addressed;
- cumulative impacts on human beings;
 - cumulative effects of the Proposals on sensitive environmental receptors (such as protected landscapes, species or habitats and designated heritage assets); and
 - cumulative effects of the Proposed Development on other development proposals.

Cumulative Impacts on Human Beings

- 11.44 The Proposed Development has the potential to impact upon humans through i.e., emissions to air, noise and traffic etc. During the preparation of this planning application, SLRs cultural heritage, noise, air quality, traffic, land quality and ecology specialists have established baseline conditions in and around the Site and worked with the applicant and liaised with Wiltshire Council's officers (where appropriate), to ensure that the potential impacts of the Proposed Development on sensitive human receptors are minimised.
- 11.45 A low risk of dust soiling from earthworks, construction and trackout was determined by the Construction Dust Risk Assessment. Similarly, a low risk to human health from earthworks, construction and trackout activities was concluded. Furthermore, any potential dust effects during the construction phase would be temporary in nature and may only arise at particular times (i.e., certain activities and/or meteorological conditions).
- 11.46 Operational dust would be mitigated by a range of measures, primarily relating to good site management, for example, ceasing operations during high winds in the direction of sensitive receptors and using water to dampen roads and operational areas in dry weather. With the effective application of the dust mitigation measures, no significant adverse dust effects are predicted.
- 11.47 The Noise Assessment confirmed that during the daytime, the predicted noise emissions rating level

is predicted to lie significantly below the representative background sound level at all of the identified noise sensitive locations (i.e., in the order of 14dB and 24dB below for the closest properties at Cotswold Community and the Downs Cottage) At Ashton Road the numerical assessment for night-time indicated a noise emissions rating level in the order of 3 dB below the background sound level at night.

- 11.48 The Transport Statement confirmed that the Proposed Development has been reviewed in terms of highway safety and operational capacity and it has been concluded that, subject to the implementation of a Traffic Management Plan (TMP) and HGV Routing Plan to manage the seasonal traffic peaks and transport routing, there would be no detrimental impacts to the local highway.
- 11.49 In summary, none of the potential hydrological, traffic, noise, or air quality effects, either individually or cumulatively, would result in significant adverse impacts on the health or amenity of human beings.

Cumulative Effects on Sensitive Environmental Receptors

- 11.50 The cumulative effects on sensitive environmental receptors can be considered in terms of the likely effects on the ecological, landscape, heritage, air and hydrological resource, which may be affected by the predicted impacts on landscape character, wildlife designations, air and water quality. The impact of development on designated heritage assets such as listed buildings also has to be considered.
- 11.51 The character of the landscape and the setting of heritage assets can be affected through the removal of vegetation, change in landform and introduction of new features such as plant and machinery and views of vehicles during the operational phase. These impacts of development can also lead to the loss of habitats and biodiversity, increase flood risk at the Site or surrounds and impact on water quality. Noise, dust and emissions can also have a negative impact on sensitive ecological and heritage assets.

Cumulative Impacts on Heritage Assets

- 11.52 The planning application is supported by a Heritage Assessment, which concluded that no harm would be caused to designated and or non-designated heritage assets. Those designated assets assessed to be unaffected by the proposals comprise four Grade II Listed Buildings at the Old Farmhouse/ Cotswold Community- due to their significance lying predominantly within their fabric and/or the lack of change which the proposals would cause in respect to elements of setting.
- 11.53 The settlement E of Ashtonfield (LUID: 1182316) – a scheduled monument approximately 0.3km to the south of the Site was assessed in the field to ascertain the necessity to provide a full statement of significance. Whilst the proposed development is likely to cause minor changes to the wider landscape, it was concluded that there is no potential for harm to any designated heritage assets. Furthermore, the development would not affect the understanding and appreciation of the asset within the immediate setting of its farmstead.

- 11.54 In regard to mitigation, screening has been included as part of the Proposed Development design and will contribute to minimising any potential indirect effect on heritage assets. In regard to archaeological work, the geophysical survey was not able to indicate the presence of any features that would warrant mitigation measures.
- 11.55 Consequently, no cumulative impacts are anticipated on heritage assets and the development proposals are considered to be compliant with the legislative and planning policy provisions relevant to heritage.

Cumulative Impacts on the Landscape

- 11.56 Chapter 7 of the ES presents the finding of the Landscape and Visual Impact Assessment (LVIA). The LVIA established the landscape and visual baseline and through a series of wirelines, assessed the landscape and visual impacts following the construction of the AD facility. The LVIA concluded that although the proposed development would be visible to an extent, these effects would be restricted to a 1km radius of the Site. Through the appropriate use of colour and materials and the introduction of new landscape elements within the scheme, there would be limited effect on the landscape character and visual amenity within the surrounding area.

Cumulative Impacts on the Water Environment

- 11.57 A Flood Risk Assessment (FRA) and Surface Water Drainage Scheme (SWDS) have been prepared to identify whether there are any potential flooding issues at the Site and set out how the quantum and quality of the surface water runoff can be managed. There is no significant risk of flooding at the Site and the surface water drainage scheme has been designed to make an allowance for a 20% uplift in peak rainfall to accommodate for climate change.
- 11.58 Up to 100% of rainwater would be captured and reused within the AD facility processes and an appropriately sized rainwater detention pond and swale is included in the design. No cumulative impacts on the water environment are anticipated as a result of the Proposed Development as surface water run-off from the hardstanding would be collected and managed.
- 11.59 Two primary drainage systems will be adopted, for the clean (surface water runoff) and contaminated (foul) water systems. The Site will be provided with hardstanding and secondary containment constructed in accordance with industry best practice standards to prevent pollution to surface water and groundwater.
- 11.60 The clamps, storage bunkers, digestate storage bay, connecting concrete apron and digestate off-take area all drain to the sealed drainage system (leachate system). An Environmental Management System (EMS) will be in place prior to the commencement of site operations.
- 11.61 Surface water runoff resulting from the Proposed Development will be intercepted and conveyed to below ground storage crates which will provide the required attenuation prior to discharging to the highways ditch located to the southeast corner of the Site. A pump has been utilised to discharge the crates to a rainwater lagoon at greenfield rates, functioning as a conveyance feature to the highways

ditch. The crates have been designed to provide manage all surface water runoff without flooding during rainfall events up to and including a 1% AEP rainfall event inclusive of an allowance for climate change (+20%).

- 11.62 Contaminated runoff, caused by silage residue, from the silage clamps and sections of hardstanding area will be collected through a series of drainage channels, pipes, and chambers and be brought into a below ground holding tank. From this tank, runoff will be pumped to three 400m³ holding tanks within the bund where it will be reused within the process. This process has a yearly demand of 62,000m³, equating to 21/s continuous flow. This offers a sustainable drainage system, compliant with the hierarchy.
- 11.63 Clean surface water runoff will be collected from the remaining Site area, comprising building roofs and sections of hardstanding, and conveyed to the attenuation lagoon using a network of channel drains and underground pipes. It is anticipated that petrochemicals will be present within the surface water runoff from the hardstanding areas, which will be separated and removed through a full retention petrol interceptor. Runoff will then be discharged into the adjacent highways ditch at greenfield rates.
- 11.64 The runoff from within the bunds has the potential to become contaminated through process residue. This would be collected through a channel drain and discharge into a pump chamber where it would be sampled and pumped to the lagoon (if clean) or reused in the process (if contaminated). As a result, no cumulative impacts on the water environment are anticipated.

Cumulative Impacts on Ecology

- 11.65 The Preliminary Ecological Assessment (PEA) which supports the planning application, confirmed that the Site has:
- Low potential to support reptiles;
 - Moderate potential to support nesting birds;
 - Moderate Potential to support Wintering Birds;
 - High Potential for roosting bats;
 - Moderate potential for foraging / commuting bats;
 - Low potential for foraging badger;
 - Low potential for Otters;
 - Low potential for hazel dormouse; and
 - Low potential for hedgehog.
- 11.66 Precautionary actions have been recommended for priority habitats (including ancient woodland, lowland calcareous grassland and hedgerow), reptiles, nesting birds, foraging / commuting bats, hazel dormouse and hedgehog. Further to mitigation and compensation actions, it is recommended that the Site's ecological value is enhanced through the incorporation of:
- wildlife friendly landscaping; and

- invertebrate habitat features (e.g., bee houses, stag beetle loggery).

11.67 A Biodiversity Net Gain Assessment has been undertaken and concluded that this project would deliver an increase in the habitat biodiversity value of the site of up to **19%** and in the linear habitat (hedgerow) an increase in biodiversity value of the site of up to **102%**.

Summary

11.68 In summary, through the adoption of appropriate mitigation measures, and compliance with environmental controls and limits, no adverse cumulative impacts are anticipated on the sensitive environmental receptors or designated heritage assets in and around the application Site as a result of the Proposed Development. In addition, a significant biodiversity net gain can be achieved through the proposed planting scheme.

CUMULATIVE IMPACTS ON OTHER DEVELOPMENT PROPOSALS

11.69 In order to determine whether any significant cumulative impacts are likely to arise, it is important to consider the scheme proposals in the context of past, existing and future development proposals. Consideration is therefore required as to whether any other developments would contribute to creating, with the proposed scheme, a cumulative effect that would be greater than what would occur if the project was being developed in isolation. The ES is required to consider the potential for cumulative effects associated with other development, i.e., whether the effects from the proposed construction and operation of the AD facility could be combined with similar effects from other schemes to result in significant cumulative effects.

11.70 It is important to recognise that the baseline assessments in the LVIA and the technical reports which support the planning application include existing development. In EIA terms, it is good practice to consider the future baseline situation which includes other schemes that are likely to be constructed or have not yet commenced but have valid planning permission. In addition, proposed schemes which are the subject of a planning application (at the time of preparing the EIA) are also considered. The emphasis is on likely significant effects, rather than cataloguing every conceivable effect.

11.71 In relation to other development, best practice dictates that cumulative assessments of this nature should have regard to those schemes which are 'reasonably foreseeable' (i.e., usually those under construction, with an extant planning permission or are subject of a suitable development plan allocation).

11.72 The assessment is only capable of being carried out based on the information available at the time of assessment. The assessment should focus only where there is the potential for significant cumulative effects and, for this development, an initial review of potential developments requiring review has therefore focused on those developments which due to their proximity or scale are most likely to give rise to cumulative effects.

11.73 Consideration has also been given to the areas within which cumulative effects are most likely.

Typically, the following are taken into account when undertaking a cumulative impact assessment:

- existing completed projects;
- approved projects under construction;
- permitted application(s) not yet determined and if permitted would affect the Proposed Development; and
- identified in the Development Plan (and emerging Development Plans).

11.74 A search of the Wiltshire Council planning portal shows that there is one planning application for the site, for the formation of an agricultural access from Ashton Road in the southeast corner (20/04771/FUL). The area comprising the former Cotswold Community area c.500m to the south of the site has three associated permissions:

- 21/0520/REM- Reserved matters application for 27 residential units, replacement of 27 existing and conversion of the four Listed Buildings within the adjoining former Cotswold Community area – Approved Dec 2022; and
- 21/02481/LBC – Application for Listed Building Consent associated with above works. Proposed housing layout, with proposed site to the west – Approved Dec 2022.
- PL/2022/04973 - Variation of condition 2 on 16/02765/WCM to extend the time the land needs to be restored to until 1st July 2023. Approved Sept 2022.

11.75 The technical assessments which support this application, took the above planning applications into account. However, no adverse cumulative effects were identified.

11.76 SLR is unaware of any other extant or proposed applications, allocations, National Infrastructure Projects (NSIP) or known development proposals within the Council area which may need to be considered as part of any cumulative assessment.

11.77 In summary, the potential for significant cumulative impacts to arise as a result of the proposed development in conjunction with other existing or proposed developments within the vicinity of the application Site has been considered. The ES assessment chapters and technical assessments which support the planning application concluded that subject to appropriate design and mitigation measures to limit impacts from the proposed development, no significant cumulative effects on the sensitive environmental receptors were anticipated.

Summary and Conclusions

11.78 The potential impact of the proposed development on the local population and land use has been considered in the ES and the technical assessment which support the application and address traffic, air quality, noise, land quality, water, landscape, ecology and cultural heritage. No significant environmental impacts were identified, that would either individually or cumulatively, result in significant adverse effects on the local population or upon land use.

CLIMATE CHANGE

11.79 Wiltshire Council declared a climate change emergency in February 2019, resulting in two targets, which were to be carbon neutral by 2030 and to subsequently enable residents and businesses to achieve this target by 2045 – five years ahead of the UK Government’s 2050 target.

11.80 The consideration of climate change is an aspect introduced in the latest version of EIA Regulations. Under paragraph 4 of Schedule 4 an ES should (where relevant) contain “a description of the factors specified in regulation 4(2) likely to be significantly affected by the development: ... climate (for example greenhouse gas emissions, impacts relevant to adaptation) ...”. Paragraph 5 adds that:

“A description of the likely significant effects of the development on the environment resulting from, inter alia: ...

(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change”.

11.81 The UK is committed to transitioning to a low carbon economy. The Climate Change Act sets out a legal requirement for the UK to achieve ‘net zero’ carbon emissions by 2050. Government advice is that increasing the amount of energy from renewable and low carbon technologies is important to:

- to help make sure the UK has a secure energy supply;
- reduce greenhouse gas emissions to slow down climate change;
- stimulate investment in new jobs and businesses.

11.82 The proposed AD facility would contribute green, low carbon energy and support the achievement of the UK Government’s and Wiltshire Council’s targets for achieving net zero by 2050 (or before).

11.83 Unlike many other renewable energy technologies, the Proposed Development produces energy in the form of a gas rather than electricity, which allows it to fulfil a somewhat different and complementary function to other technologies:

- Renewable energy production - The proposed AD plant would produce biomethane which could be used directly to heat homes and fuel vehicles. The proposed development would provide enough green gas to meet the heating demand of 8,700 UK households (based on 12.3 MWh/y per household). In comparison with standard UK grid emissions, the biomethane produced by the AD facility would have an equivalent saving of 34,000 tonnes of CO₂ each year, equivalent to taking 22,600 cars off the road.
- Energy self-sufficiency – The UK is expected to be partially dependent on gas, for many years. The Russian invasion of Ukraine has brought into sharp focus how reliant Europe and the UK is on imported gas. The UK currently imports 52% of its gas from overseas and the current crisis has highlighted the need for greater self-sufficiency.

- Fuel poverty – The rapidly rising cost of fuel in the UK is impacting on the welfare of large numbers of people across the country. Development of additional supplies of gas within the UK will help protect against inflationary energy prices.