

ASHTON KEYNES GREEN ENERGY

PROPOSED ANAEROBIC DIGESTION FACILITY AT ASHTON KEYNES

Non-Technical Summary

Prepared for: Acorn Bioenergy Limited

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1.0 Introduction

Acorn Bioenergy Limited (Acorn) is applying to Wiltshire Council for planning permission to construct and operate an anaerobic digestion facility on agricultural land off Ashton Road, Ashton Keynes, Wiltshire. The nearest postcode is SN6 6QT. The Site location is shown on Drawing AKE-0002

The purpose of this Non-Technical Summary (NTS) is to present, in non-technical language the results of the Environmental Impact Assessment (EIA) which has been undertaken to accompany the planning application.

The full results of the EIA have been reported in the Environmental Statement (ES). The following sections of this NTS summarise the issues considered by the EIA, the potential impacts of the proposed development and the way in which any impacts could be mitigated and/or compensated for.

1.1 Summary of the Proposed Development

The application proposal is as follows:

“The construction and operation of an anaerobic digestion facility, ancillary infrastructure and the construction of a new access and access from Ashton Road in Ashton Keynes, Wiltshire”.

The total site area is approximately 6.99ha and the proposed AD facility would accept in the region of 91,000 tonnes per annum of feedstock from local farms. The feedstock would undergo a process of controlled decomposition (anaerobic digestion) within the AD facility, which would generate c. 17,456,073Nm³ biogas, which would be upgraded on site into biomethane, before being removed by tanker to a central facility for injection into the national grid. The AD facility would have the capacity to produce approximately 9,815,904, Nm³ of biomethane per annum.

The AD facility feedstock would typically comprise the following:

- energy crops such as silage, rye, maize, and grass;
- straw; and
- poultry litter and farmyard manures.

In addition to the biogas, the AD process would also produce a nutrient rich solid fertiliser, soil conditioner and a liquid fertiliser (digestate), which would be used on local farmland, in place of raw manures and artificial fertilisers.

The AD process would also result in the production of carbon dioxide (CO₂) as a natural by-product. This by-product is usually vented by AD plant operators, for whom the main goal is the production of biomethane. However, as CO₂ is a precious resource, the proposed AD facility would be fitted with equipment to upgrade the CO₂ to 99.9% purity, suitable for almost all industrial and commercial applications in the UK. Upgraded CO₂ would be liquefied and transported by road to end users within the market area. The proposed AD facility would produce approximately 13,714 tonnes of CO₂ a year.

The application would also include highway modifications to Ashton Road, creating an improved entrance to the site in the southeast corner.

2.0 Site and Surroundings

2.1 Application Site

The application site, (the Site) consists of a broadly rectangular field at NGR SU 03993 96195 located immediately west of Ashton Road in an agricultural area, approximately 2km north of the village of Ashton Keynes, Wiltshire.

The Site is formed of one complete field and a portion of a second field immediately to the south, which are bound to the east by Ashton Road. Both fields which form the site are in arable use, and the fields are divided by an intermittent hedge and low trees. A shallow drainage ditch lies on the northern side of the divide between the two fields. The Site is bound by hedges on all sides except the southern boundary which bisects the southern field. Further shallow drainage ditches are present outside the north and eastern boundaries. An unsurfaced access track runs along the outside of the western boundary.

Beyond Ashton Road, to the east, is a previous historic landfill site, which has since been restored to sheep pasture. A derelict barn with livestock holding pens is present in the adjacent field to the northwest of the Site. The barn is constructed of wood and corrugated metal roofing, with some areas of concrete flooring in the holding pens. To the south-east is an Aggregate Industries concrete works.

The wider area around the proposed site is surrounded by a number of inland lakes and wetlands which comprise the Cotswolds Water Park, which is also an ecologically designated SSSI. Figure 2-1 shows the application site (edged red) in the context of the surrounding area.

Figure 2-1
Location of Application Site



2.2 Surrounding Area

The Site is surrounded by agricultural land on all sides. Beyond Ashton Road, to the east, is a previous historic landfill site, which has since been restored to sheep pasture. To the south-east is an Aggregate Industries concrete works.

The site is set within a landscape of similar open fields characteristic of the area, on a wider scale the area is also noted for its large network of the lakes. The lakes, used mostly for leisure purposes make up a network of approximately 170 lakes, creating the Cotswold Water Park SSSI. The villages of South Cerney and Ashton Keyes are approximately 2km away to the southwest and north respectively.

The closest residential properties are located at the Old Farmhouse/ Cotswold Community this is situated to the southwest of the site. There are further residential properties to the north, in a small hamlet situated on the B4696.

3.0 Design Considerations

3.1 Design Principles

The layout and design of the proposed development was considered as part of an iterative design process aimed at reducing the potential environmental effects, whilst accommodating operational and commercial requirements.

AD facility location is primarily driven by the key objectives of a rural location with good access to the local transport network and established feedstock providers whilst also ensuring that primary infrastructure components, specifically the digester dome tops, are well-screened to retain the characteristic rural amenity of the surrounding landscape. The key constraints which were taken into account during the design process included:

- landscape character and visual amenity;
- location of residential properties – proximity to noise sensitive receptors;
- presence of protected habitats and species;
- potential for traffic, transport and access effects;
- presence of archaeological and cultural heritage features;
- presence of watercourses and associated flood risk (including surface water);
- key recreational routes and other land users; and
- presence of existing utilities including power lines, pipelines and telecommunications links.

Embedded Mitigation

Considerable efforts were made to produce a Site layout which achieves the most satisfactory relationship with the landscape of the Site whilst respecting other environmental and technical considerations. During the EIA Screening process, the multi-disciplinary team met to discuss the various issues which were identified as part of the initial constraints screening process. The team identified the optimal locations for each type of infrastructure component, i.e., electrical, CHP, tall storage tanks, rainwater detention ponds, digestate lagoons etc.

Mitigation of the potential effects of the proposed development has been predominantly incorporated through the iterative design process. Changes made as a consequence of this iterative design process, i.e., application of tree root protection zones and vegetative screening and screening bunds; access design and highway modifications to Ashton Road and technical consideration of potential impacts on residential properties (i.e., air quality and noise) are considered to be embedded mitigation.

The findings of the technical and environmental studies undertaken for the planning application were used to inform the design of the proposed development, and hence achieved a ‘best fit’ within the environment of the proposed Site.

In summary, the proposed development Site has been identified as occupying a suitable and sustainable location for the development of an AD facility and associated infrastructure, close to the primary sources of feedstock and well located for access to the B4696 and the wider road network surrounding Wiltshire.

Operational Hours

The AD process involves a biological process that is continuous. The processing plant would therefore be operational 24/7. The facility would be staffed by up to five full time equivalent (FTE) members of staff on-site during the hours of 07:00 – 18:00 Monday – Sunday, except during peak harvest periods when working hours

would be extended as necessary. A supervisory control and data acquisition (SCADA) system would monitor the facility overnight when it is not manned.

Deliveries of crops to site would be determined by the harvest. Harvests are ordinarily completed on a campaign basis, therefore during the peak harvest periods, delivery hours would be in line with standard agricultural harvest-time activity.

Vehicle movements relating to delivery of agricultural by-products and export of digestate would generally be limited to the following hours:

- Monday – Friday 07:00 – 18:00; and
- Saturday 07:00 – 13:00.

Export of the biomethane would take place once every 12 hours, including overnight. There will also be a number of CO₂ HGV trips, but these would be 1 to 2 per day over the year. There would be no deliveries into or out of the site on Sundays and recognised Public Holidays.

3.2 Access

3.2.1 Vehicle Movements and Vehicular Access

Good access to the highway network was an operational requirement of the proposed development.

Access to the Site would be via an upgraded access at the location of the existing farm access on Ashton Road. The proposed site access junction has been designed in accordance with CD123 DMBR, as a simple priority junction with a 15 metre radii and tapers at 1:10 over 25 metres. The design has been assessed in terms of HGV swept-paths; the access drawing includes swept-paths for a maximum sized articulated lorry which demonstrates that this worst-case vehicle can access and egress without any issue. Critically, it demonstrates that an HGV can gain access to the site whilst another HGV waits to exit.

The Transport Assessment and Transport Statement contained in Chapter 9 of the ES provide a full assessment of vehicle movements. Due to the nature of the AD facility feedstock, the proposals are likely to result in a varied traffic HGV traffic generation across the year. The traffic forecast in the Transport Statement indicated that for the majority of the year (10 months) the proposed development would generate 38-44 HGV/tractor trips per day associated with local farming operations, which equates to 76-88 HGV/tractor movements. On the basis of a 10 hour working day and an even traffic profile, this level of traffic would equate to an average of 4-5 loads or 8-10 movements per hour.

Proposed site traffic generation levels would then peak associated with seasonal harvest periods. This would likely be restricted to two weeks in June and July (Rye Silage) and two weeks in September (Maize Silage). Predicted traffic levels would peak for two weeks in June and July with up to 80 HGV/Tractor trips per day, which equates to 160 HGV/Tractor movements; a lesser peak is forecast to occur in September and October with up to 72 HGV/Tractor trips per day, which equated to 144 HGV/ Tractor movements.

3.2.2 Parking

Parking spaces and manoeuvring spaces have been carefully considered to ensure that no vehicles would need to queue to get into the Site. Six car parking spaces are proposed close to the Site office and there would be additional space available for parking around the Site.

The proposed access road would have significant internal length serving traffic between the site and the highway. This would provide a high level of potential internal vehicle queuing capacity, ensuring that no stacking back onto the highway would occur.

3.3 Site Layout

The scale of the development is dictated by the process undertaken at the proposed facility, and every attempt has been made to ensure the layout effectively apportions the scale of development across the site and that sufficient screening is proposed to minimise any visual impact.

Figure 3-1 presents the Site Layout, (GGP Consult Drawing 29419 -101 Rev F- Site Layout Plan).

Figure 3-1 – Site Layout Plan



3.3.1 Vehicle-wash

Although the provision of a hard surfaced junction, access road and manoeuvring space would greatly limit the potential for vehicles to collect mud on their wheels, facilities would be available to clean vehicles of mud/debris. The facility would include a vehicle/plant washdown area adjacent to the weighbridge for general site maintenance purposes. This resource will be available for all vehicles, where necessary, to ensure that no mud/debris is tracked out onto the highway. The internal site area would be kept clean and maintained to a high level as part of good standard management practice, therefore any track out of mud/debris on to the highway relating to the application site will not occur.

3.3.2 Materials and Appearance

The design of the proposed AD facility has been carefully considered to ensure that the appearance of the proposed AD facility blends into its rural setting as much as possible. Design measures include the careful consideration of colour palette to integrate structures within the surrounds (see application drawings for detail), careful siting of development infrastructure within the site, and the careful use of external lighting.

3.3.3 Fuel Storage

The proposed fuel storage area would be bunded with a capacity of at least 110% of the largest tank.

4.0 Environmental Considerations

The section below provides an overview of the scope and results of the technical assessments which have been undertaken to support the planning application. The assessments are provided in full as part of this application.

4.1 Air Quality

An Air Quality Assessment (AQA) was undertaken in support of this planning application and covered the following topics:

- Construction Dust Risk Assessment;
- Fugitive Dust Emissions;
- Road Traffic Emissions - Screening Assessment;
- Fugitive Odour Emissions;
- CHP Emissions - Screening Assessment;
- Bioaerosols Assessment; and
- Ammonia Emissions Assessment.

4.1.1 Assessment Results

The full results of the AQA are set out in Chapter 4 of the ES. In summary, the AQA concluded that the construction of the proposed AD facility would result in a 'not significant' risk of impacts. The operational phase assessment concluded that the proposed development of the AD facility would result in a 'not significant' effect at human receptor locations with regard to odour, dust, ammonia, CHP and traffic emissions and that bioaerosols concentrations in the Site locale are not anticipated to increase as a result of the proposed Site activities.

With regard to ecological receptors, the process emissions are considered to cause 'no significant pollution' on the Ancient Woodlands and Local Wildlife Sites and 'no likely significant effects' on the Special Areas of Conservation.

4.2 Archaeology and Cultural Heritage

The planning application is supported by a Heritage Desk Based Assessment (HDBA) which identifies known and potential archaeological remains and heritage assets within the site and discusses their significance. Historic mapping suggests the site has always been open undeveloped agricultural land, likewise, has the surrounding areas. There are no World Heritage Sites, Registered Battlefields or Registered Parks and Gardens within the Site Boundary.

4.2.1 Assessment Methodology

A baseline was gathered in order to understand the presence/absence of archaeology and heritage receptors within the Site and surrounds. The baseline was subsequently informed by a Site Inspection, in addition to further evaluation fieldwork in October 2022. A geophysical survey was undertaken as part of the Site evaluation, incorporating the extent of footprint area within the Site boundary, also in October 2022.

4.2.2 Archaeology Conclusions

The HDBA concluded that there is the potential for some harm to heritage assets as a result of the proposed development, namely the potential removal of *in-situ* prehistoric to post-Medieval remains.

The findings of the geophysical survey suggests that these remains are limited in extent, though if present they would have potential to inform us of ancient occupation of higher ground outcrops such as Ashton Down compared to lower lying gravel terraces. There is no evidence that would suggest that any remains on Site are of such significance that would merit preservation *in-situ*.

The proposals are considered to be compliant with the legislative and planning policy provisions relevant to archaeology.

4.2.3 Heritage Conclusions

There would be a change in the setting of the grade II listed building Ashtonfields Community Hall as a result of some screened intervisibility between the upper storey of the building and the top of the silage clamps. This is not considered to amount to harm to the listed building, as the elements of its setting which contribute to its significance would be wholly preserved.

The proposals are considered to be compliant with the legislative and planning policy provisions relevant to heritage.

4.3 Ecology and Nature Conservation

A Preliminary Ecological Appraisal (PEA) of the Site has been undertaken to support this planning application. A full copy accompanies ES Chapter 5 Ecology and a summary of the findings and recommendations is set out below.

The purpose of the PEA was to:

- establish the ecological baseline conditions and determine the importance of ecological features present (or those that could be present), as far as is possible;
- identify potential ecological constraints to the proposed development and make initial recommendations to avoid potential significant effects on important ecological features, where possible;
- identify potential requirements for mitigation, where possible, including mitigation measures that will be required and those that may be required (depending on results of further surveys or final scheme design);
- establish any requirements for more detailed surveys; and
- identify opportunities for biodiversity enhancements as part of the project.

The assessment of impacts resulting from the proposed development and the detailed development of mitigation measures are covered in a separate Ecological Impact Assessment report (EclA), once the breeding bird surveys have been finalised.

4.3.1 Mitigation

Prior to commencement of any construction works, an Ecological Impact Assessment would be undertaken for the site before work begins. This EIA would detail key mitigation, compensation, enhancement actions to enable legislative and policy compliance, aiming to achieve net gains in biodiversity for the site.

Further to this, standard construction mitigation set out within a Construction and Environmental Management Plan (CEMP) would be advanced to encompass protection applicable to priority habitats and notable/protected species. Disturbance from construction works i.e., noise, vibration, light disturbance, dust deposition and potential pollutant spillage would ultimately be controlled in line with the CEMP, as reflected in the suite of supporting mitigation documents including the Lighting Strategy, Noise and Air Quality assessments etc.

Precautionary actions would be implemented to limit disturbance to potential reptiles, amphibians, hedgehog, nesting birds and foraging/commuting/rooting bats, with seasonal considerations factored in. Mitigation is detailed within the associated PEA report and Ecological Impact Assessment (EIA).

4.3.2 Biodiversity Enhancement

The Biodiversity Net Gain (BNG) assessment, which supports this application confirmed that once the proposed landscape plans are delivered, the 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%**.

Opportunities for biodiversity enhancements include:

- Wildlife friendly planting – new landscaping should provide a diverse mix of species of demonstratable value for wildlife know to be at a site/ have potential to be encourages to the Site.
- Invertebrate habitat features – Invertebrate habitat features should be incorporated within landscaped areas to provide features of interest as well as ecological function. Stag beetle loggeries, solitary beehives and habitat panels should be places in suitable locations. Stag beetle loggeries should be placed in shady areas amongst trees to provide forage and shelter for saproxylic invertebrates in larval stage, whereas beehives and habitats panels should be located in sunny areas.

4.4 Ground Conditions/ Land Quality

A Preliminary Land Quality Risk Assessment (PLQRA) was undertaken in February 2023, to demonstrate whether the Site was suitable for its proposed development, taking account of potential contamination related risks. The PLQRA comprised a desk top study of published information including site history and environmental setting which was used to develop a Conceptual Site Model (CSM) risk assessment. A walkover was undertaken at the Site in September 2022.

Historically the Site has always been open, arable land and has had no previous developments. The land quality assessment determined that the proposed development would have a negligible impact on human health and minor impact on controlled waters during the construction phase due to the potential for low level and localised impacts during site activities, for example, as a result of leaks and spillages from plant and equipment, or from potential sediment in surface water run-off. The potential impact can be mitigated as part of the construction phase measures and controls detailed in the CEMP.

A ground investigation has been undertaken on the Site to establish baseline ground conditions and assess the potential risk to receptors. At the time of preparing ES Chapter 8, the ground investigation report had not been finalised. Groundwater and ground gas monitoring is scheduled to be completed to inform groundwater flow elevations and ground gas risk assessment and the results will be provided to Wiltshire Council.

However, on the basis of the initial findings of the ground investigation, no identifiable sources of on-site contamination have been identified. No made ground is present across the Site and there were no visual or olfactory indications of contamination present. A landfill is located to the east of the Site, and observations have not indicated the potential presence of leachate, ground gases or vapours migrating on to the Site. This will be confirmed through laboratory analysis and ground gas monitoring and the overall investigation and risk assessment findings will be reported in a ground investigation technical report.

In summary, the land quality assessment determined that the proposed development would have a negligible impact on human health and controlled waters during the operational phase. The facility will be regulated as a permitted activity by the Environment Agency under the Environmental Permitting (England & Wales) Regulations 2016 (as amended).

As a permitted facility, the operation of the plant will need to conform with certain regulatory requirements. It is considered that this additional layer of regulatory control will ensure that land quality impacts are further

mitigated during the operational phase of the facility. No significant effects in terms of the EIA Regulations are therefore predicted on land quality during the construction or operational phases of the proposed AD facility.

4.5 Landscape and Visual Amenity

A Landscape and Visual Assessment (LVIA) (including ZTV review) and a Landscape Strategy Plan has been undertaken to determine the likely effects of the proposed development, on landscape character, designations and elements and visual amenity of the Site and its surroundings. The LVIA is presented in full in Chapter 7 of the ES and is supported by a number of photographs and visualisations from key viewpoints.

An initial 5 km Study Area was defined to inform a review of aerial photographs and desktop analysis of designations and character areas. The site visit concluded that the Study Area should reflect the extent of the ZTV and the level of intervisibility across the Study Area which in places covers a 5 km radius.

4.5.1 LVIA Findings

In terms of effects on Landscape Character Areas (LCA) or Landscape Character Types (LCT), the proposed development would introduce some new elements into the local landscape.

The LVIA concluded that on operation (Year 0) there would be moderate adverse significant effects on LCT 3 River Basin Clay Vales (LCA 3A South Cerney and Ashton Keynes Settled Wetland) within which the Site lies. This effect would diminish to not significant by Year 15. Effects on remaining LCTs and LCAs would be insignificant ranging from Negligible to Minor, Minor to Minor to Moderate adverse during construction, operation Year 0 and Year 15. Such effects would reduce over time where appropriate as existing and mitigation planting matures screening lower elevations of the development.

From the Kemble and Ewen Special Landscape Area (SLA) impacts on the aesthetic and perceptual qualities of the designation including views and tranquillity would be limited. Intervisibility between the SLA and the proposed development would be low with only the upper elevations of the AD facility potentially visible. Effects would range on operation (Year 0) from Minor adverse to Negligible to Minor adverse (Year 15); effects reducing over time and as both mitigation and existing planting matures.

Localised effects on landscape elements specific to the Site would range from Minor adverse insignificant, Moderate adverse significant to, Moderate to Major adverse significant and vary during construction and operation. Key effects relate to a change to landform, land use / rural character, tranquillity and vegetation generating Moderate or Moderate to Major adverse effects on operation (Year 0). Mitigation planting over time would result in a Minor to Moderate positive effect by Year 15 altering from Moderate adverse during construction and Year 0 operation.

Visual Effects

In terms of visual effects, recreational receptors utilising footpath AKEY4 to the west of the Site and residents off Ashton Road to the south-east and north of the Site would experience significant effects; Moderate to Major adverse for recreational users and Moderate adverse for local residents respectively.

Effects on recreational users of this adjacent footpath would remain significant but reduce from Moderate to Major to Moderate adverse significant as mitigation planting matures screening the lower elevations of the AD facility.

Remaining visual receptors would experience an Unchanged, Negligible, Negligible to Minor, Minor or Minor to Moderate adverse insignificant effect. Where views are available of the Proposed Development these would be partial and filtered through intervening vegetation and of cranes during construction or the upper elevations of the digester tankers on Operation (Year 0 and Year 15). Over time and as mitigation and existing planting matures some of these effects would diminish.

LVIA Conclusion

The LVIA concluded that although the proposed AD facility would generate visual effects, these would be localised to a 1 km radius of the Site and within the Site itself. The facility would be visible to an extent, however, through the appropriate use of colour and materials and the introduction of new soft landscape elements within the scheme, the effects on the landscape character and visual amenity within the surrounding area would reduce over time.

4.5.2 Landscape Strategy

Figure 6 of LVIA (reproduced as Figure 4-2 below) shows the proposed Landscape Strategy for the site, which has been prepared in consultation with SLR's ecologist. The Landscape Strategy includes an indicative tree and shrub mix list.

Figure 4-2
Proposed Landscape Strategy



The proposals seek to reflect the landscape strategy and management guidelines of the Landscape Types the site is situated on, Landscape Type 12a Thames Open Clay Vales.

Proposed mitigation planting and management include the following:

- Offsite measures which would allow the existing hedgerows and hedgerow trees to be retained and managed with additional emergent trees maturing. The aim would be to increase the height of the hedgerow to a height of 2.5 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 native hedgerow planting to the north-west and south-west of the Site to provide visual screening. Planting and the management of such planting is covered under a Memorandum of Agreement between Acorn and the landowner.

- New native tree and shrub planting (covering approximately 0.82 ha) 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 beneficial screening for visual receptors along the local rights of way network to the north, west and south-west. The hedgerow would be planted at five plants per linear metre and once established the aim would be to increase the average height and width of woody growth to greater than 1.5m along length of the hedgerow, with at least one mature tree per 30m stretch. Access to hedge bases would be managed (restricted) to improve habitat value; and
- 1.34 ha 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 embankments of the land drain to the southwest and south of the Site.

4.6 Noise

SLR have completed a noise impact assessment which has been based on the results of a noise survey carried out at locations representative of the nearest noise-sensitive receptors to the site over representative daytime and night-time periods, shown in the Figure 5-2. A baseline noise survey was undertaken between Thursday 29th September and Tuesday 4th October to determine the baseline sound levels in the vicinity of the proposed development.

The assessment was undertaken in accordance with BS4142:2014+A1:2009 with a rating level of 5dB(A) above background being acceptable depending upon the context.

The nearest Noise-Sensitive Receptors were identified as follows:

- NSR 1 – Downs Cottage nominally 450m to the north of the Site, this is a residential dwelling off Ashton Road; and
- NSR 2 – Cotswold Community are building, nominally 600m south-west of the Site.

Figure 4-3
Noise Sensitive Receptors monitoring locations



It is expected that the sound resulting from the proposed development will be largely unnoticeable at the noise sensitive receptors because of the low absolute level of emissions, the character of the sound in the residual sound climate, and the predicted internal level of emissions inside the receptor.

The development may marginally affect the acoustic character of the area during the most sensitive periods of the night-time of proposed operation, but not to the extent that there is a perceived change in quality of life

In accordance with overarching planning requirements, measures have been satisfactorily considered to “mitigate and minimise adverse impacts on health and quality of life” which can be secured on the development by conditional approval, if necessary, to include:

- All reasonable standard mitigation of plant including using proprietary attenuation measures, suitable enclosures, and integral CHP stack silencers.

It is concluded that noise should not present reasonable grounds for planning refusal. 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 and will be largely unnoticeable at the noise-sensitive receptors. Mitigation has been included in the noise emissions predictions, to include proprietary plant equipment attenuation including CHP stack silencers.

4.7 Traffic and Transport

A Transport Statement (TS) has been prepared in support of the planning application, to assess potential impacts of the proposed development upon the local highway network. Ashton Road is approximately 2.2km in length running between the crossroad junctions with Ewen Road/ Upper Up to the north and the B4696/ Spine Road to the south. Roads comprising the local and wider highways infrastructure serving the application site include Ashton Road, B4696, Ewen Road, and A419.

The proposed Site access would be located in the south-eastern corner of the site and will replace the current site access already in situ making it appropriate for the required use. The current access is situated approximately 800 metres north of the Aggregate Industries Site access, the entrance abuts Ashton Road to the west.

A detailed site audit has been undertaken which considers the existing highway conditions. This includes the following background data:

- 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.

4.7.1 Imports and Exports

The proposed AD facility would process c.91,000tpa of agricultural feedstock. Feedstock in the form of silage (rye, maize and grass varieties); straw; dairy slurry; farmyard manure; and poultry litter would be transported to Site via HGV/ tractor-trailers from surrounding farms.

The following by-products and outputs would then be transported off the Site via HGV/ tractor-trailers:

- Biomethane which would be stored on site prior to being transported by tanker to a central gas injection point;
- CO₂ suitable for almost all industrial and commercial applications in the UK would also be produced and exported;
- Soil digestate used as an agricultural fertiliser; and
- Liquid digestate used as an agricultural fertiliser.

Due to the nature of some feedstock harvesting, some deliveries would follow seasonal patterns. Other imports would follow a more consistent pattern of delivery throughout the year.

4.7.2 Proposed Traffic Generation

Due to the nature of the AD facility feedstock, the proposals are likely to result in a varied traffic HGV traffic generation across the year. The traffic forecast in the Transport Statement indicated that for the majority of the year (10 months) the proposed development would generate 38-44 HGV/tractor trips per day associated with local farming operations, which equates to 76-88 HGV/tractor movements. On the basis of a 10 hour working day and an even traffic profile, this level of traffic would equate to an average of 4-5 loads or 8-10 movements per hour.

Proposed site traffic generation levels would then peak associated with seasonal harvest periods. This would likely be restricted to two weeks in June and July (Rye Silage) and two weeks in September (Maize Silage). Predicted traffic levels would peak for two weeks in June and July with up to 80 HGV/Tractor trips per day, which equates to 160 HGV/Tractor movements; a lesser peak is forecast to occur in September and October with up to 72 HGV/Tractor trips per day, which equated to 144 HGV/ Tractor movements.

It is important to note that whilst the proposed site traffic would be new to the application site, a large proportion of the traffic movements are already on the local network as the proposed AD Facility would service existing local farms which have an existing traffic generation. This has been quantified as approximately 5,843 annual loads which make up a large proportion (47%) of the proposed 12,530 annual loads.

Therefore, a proportion of the movements would be redistributed traffic, rather than new traffic. The proposed increase would equate to an average of 19 additional HGV/tractor loads per day in the local area. This figure is provided for comparison purposes only as in practice, traffic would fluctuate at harvest periods

4.7.3 Traffic and Transport Conclusions

The proposed scheme has been designed and reviewed in terms of highway safety and capacity. 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.

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.

4.8 Water Environment

A Flood Risk Assessment (FRA) and Surface Water Drainage Strategy (SWDS) has been prepared to support the planning application. Reporting has been completed in accordance with guidance presented within the National Planning Policy Framework¹ (NPPF) and its associated Planning Practice Guidance² (PPG), taking due account of current best practice documents relating to assessment of flood risk published by the British Standards Institution BS8533³.

4.8.1 Flood Risk Summary

Flood risk has been assessed in line with BS8533, taking account of national and local planning policy and guidance, and all potential sources of flooding to the Site have been considered.

A screening assessment, detailed at Section 4.0 of the FRA & SWDS, has reviewed the flood risk posed by sources including fluvial, tidal, surface water, groundwater, sewer, reservoirs, canals and infrastructure failure. The

1 National Planning Policy Framework: Communities and Local Government (Updated July 2021)

2 Planning Practice Guidance: Communities and Local Government (Updated June 2021)

3 BS8533:2017, Assessing and managing flood risk in development: Code of Practice (December 2017)

screening assessment concluded that the Site lies in Flood Zone 1 and, therefore, in terms of both the Exception and Sequential Tests, the Site is suitable for development.

Allowances for changes to peak river flows have been considered. The Site has however, been assessed to be outside an area at risk of flooding over the 25-year lifetime of the proposed development. Additionally, in line with national, county and local policies, the development must make allowance for a 20% uplift in peak rainfall to accommodate for climate change, which has been included within the SWDS for the Site.

4.8.2 Drainage Philosophy

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.

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.

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.

The runoff corresponding to the foul water system will be harvested and used on the process to meet around 100% of the water demand of the process.

4.8.3 Surface Water Drainage Strategy

The SWDS has been developed to demonstrate that the requirements of national, county and local planning policy can be achieved at the Site given the nature and the quantum of development proposed.

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 highway ditch.

The crate have been designed to provide manage 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%).

4.9 Mitigation

Mitigation measures to be adopted 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.

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.

The proposed landscape planting will contribute to minimising any potential indirect effect on heritage assets too.

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 0.82ha) 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;
- 1.34ha 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

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- 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.

5.0 Conclusion

The Environmental Statement has provided a detailed and objective analysis of the potential environmental effects of the proposed AD facility. Each technical assessment compiled in support of the planning application, has been undertaken in accordance with up-to-date guidance and standards and the conclusion of the planning application and EIA is that there is no single issue or combination of issues that should prevent the proposed development from proceeding.

The proposed development would be acceptable in terms of highway capacity and safety, would not cause adverse public health and safety impacts or unacceptable adverse amenity or visual impacts. The carefully designed layout scheme would ensure that there would not be a significant adverse effect on designated or important habitats and species and that no additional flood risk would be caused.

The ES presents information to Wiltshire Council and other consultees, to help them consider the benefits of the proposed development. All developments result in some level of environmental impact and the purpose of national and local planning policy is to ensure that these impacts are within acceptable limits.

Planning conditions, good management by the applicant and an Environmental Permit from the Environment Agency would ensure the protection of local amenity and the environment from negative effects of development. Furthermore, the Landscape Strategy, developed in consultation with SLR ecologists and landscape architects, would ensure that the final design of the scheme brings landscape improvements and also brings ecological benefits over and above those offered by the existing arable land. As the Landscape Strategy would lead to a level of enhancement at or greater than a **10%**, the proposed development is considered to satisfy the current requirement for biodiversity enhancement under the National Planning Policy Framework⁴ and the future ambition set out within the Environment Act.

Planning policy issues are explored in the Planning, Design and Access Statement. The key conclusions from this analysis are that there is wide support for the developments which provide a sustainable means of generating low carbon, renewable energy. The development would provide employment during construction and operation, which in turn returns money into the local economy.

The production of biomethane would be in line with local and national targets for reducing CO₂ emissions and reducing reliance on fossil fuels, whilst also contributing to fuel self-sufficiency. In addition, the solid and liquid digestate would be spread on surrounding farmland in place of artificial fertilisers, thereby reducing the reliance on imported fertiliser. In summary, the proposed development would provide a range of environmental benefits and could proceed in a way which minimises environmental effects, and the effects from operations could be maintained within acceptable limits.

In the light of the above considerations, it is concluded that the development could proceed in accordance with the underlying objectives of policies relating to a low carbon economy, production of renewable energy and supporting the resilience of the rural economy. The planning policy analysis also concludes that the development could proceed in accordance with the development plan policies for the area.

⁴ Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework.

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